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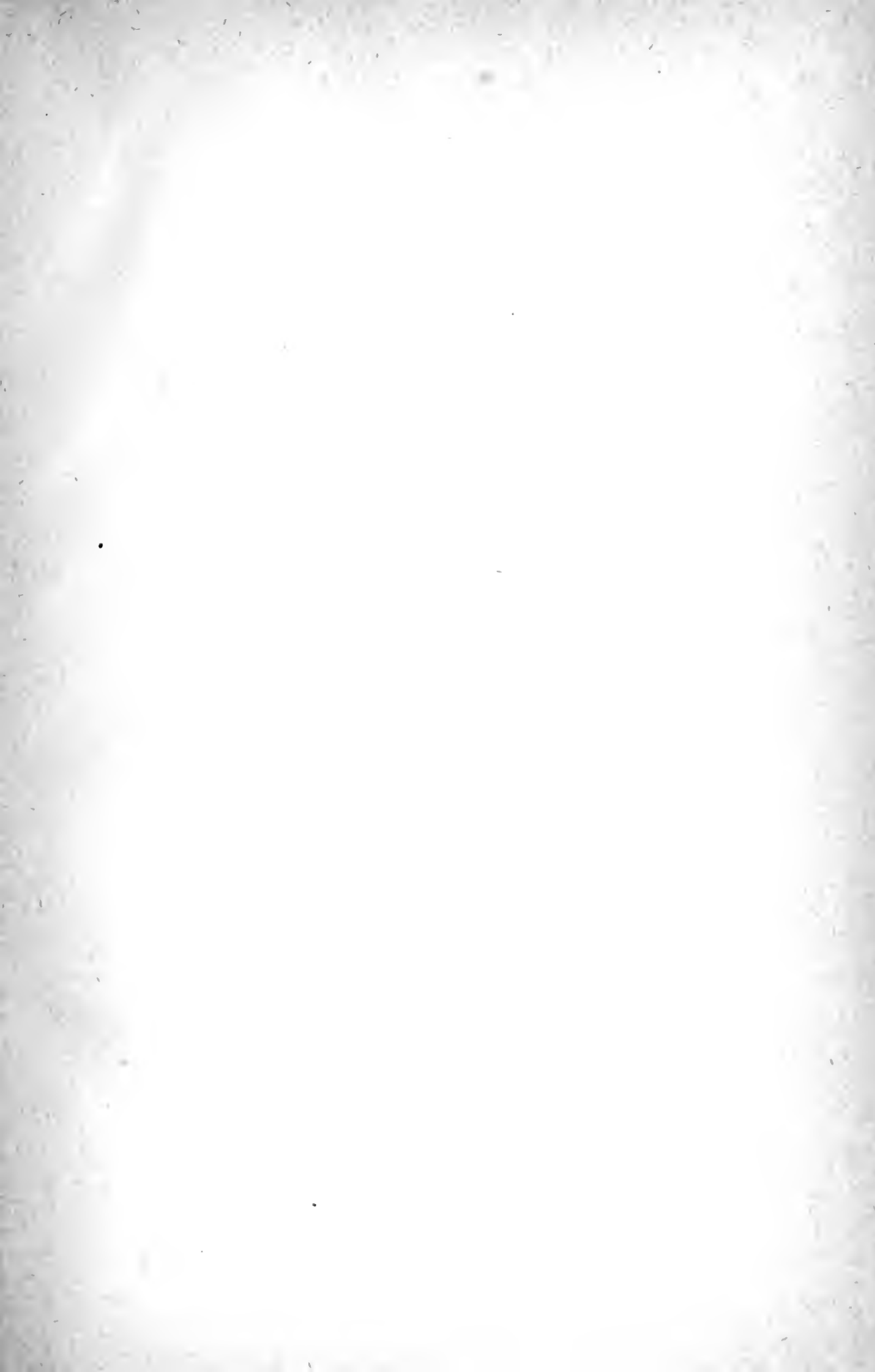


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# SEVENTH ANNUAL REPORT

OF THE

# STATE BOARD OF HEALTH

OF THE

STATE OF KANSAS,

FROM

JANUARY 1, 1891, TO DECEMBER 31, 1891.

*With the Compliments of the*

KANSAS STATE BOARD OF HEALTH.

TOPEKA.

PRESS OF THE HAMILTON PRINTING COMPANY:

Edwin H. Snow, State Printer.

1892.

## MEMBERS OF THE BOARD.

G. H. T. JOHNSON, M. D., PREST.	Atchison	Term expires March 28, 1893.
D. C. JONES, M. D.	Topeka	Term expires March 28, 1893.
J. MILTON WELCH, M. D.	Wichita	Term expires March 28, 1893.
ROBERT C. MUSGRAVE, M. D.*	Grenola	Term expires March 28, 1892.
R. A. WILLIAMS, M. D.*	Olathe	Term expires March 28, 1892.
ANDREW SABINE, M. D.*	Garden City	Term expires March 28, 1892.
H. D. HILL, M. D.	Augusta	Term expires March 28, 1894.
FRANK SWALLOW, M. D.	Valley Falls	Term expires March 28, 1894.
J. W. JENNEY, M. D.	Salina	Term expires March 28, 1894.

M. O'BRIEN, M. D., SECRETARY, TOPEKA.

\* Reappointed.

## COMMITTEES OF THE BOARD.

1. Water Sources, Sewerage, Drainage, and Disposal of Substances Injurious to Health—J. MILTON WELCH, M. D.
2. Legislation, Revision of Rules and Regulations, and Library—H. D. HILL, M. D.
3. Topography, Meteorology, and Hygiene of Public Institutions—D. C. JONES, M. D.
4. Special Sources of Danger to Life and Health—FRANK SWALLOW, M. D.
5. Adulteration of Food, Drinks, and Drugs—R. C. MUSGRAVE, M. D.
6. Epidemic and Endemic Diseases, and Quarantine—R. A. WILLIAMS, M. D.
7. Hygiene of Occupations, and Railway Sanitation—ANDREW SABINE, M. D.
8. Heating, Ventilation, Lighting, and Hygiene of Schools—J. W. JENNEY, M. D.
9. Vital Statistics, Registration, Meteorological Service, and Nomenclature—M. O'BRIEN, M. D.
10. Executive—G. H. T. JOHNSON, M. D., D. C. JONES, M. D., and H. D. HILL, M. D.
11. Finance—D. C. JONES, M. D., FRANK SWALLOW, M. D., and J. MILTON WELCH, M. D.

## COUNTY HEALTH OFFICERS.

The following is a list of the County Health Officers, and their post-office addresses, in the various counties in the State:

COUNTIES.	TOWNS.	HEALTH OFFICERS.
Anderson.....	Garnett.....	D. M. Craig, M. D.
Atchison.....	Atchison.....	C. H. Linley, M. D.
Bourbon.....	Fort Scott.....	R. Aikman, M. D.
Brown.....	Hiawatha.....	S. M. Pratt, M. D.
Butler.....	El Dorado.....	J. A. McKenzie, M. D.
Barber.....	Medicine Lodge.....	J. D. Karr, M. D.
Chase.....	Cottonwood Falls.....	C. E. Hait, M. D.
Chautauqua.....	Sedan.....	W. T. Courtwright, M. D.
Cheyenne.....	St. Francis.....	E. L. Waterman, M. D.
Clay.....	Clay Center.....	S. E. Reynolds, M. D.
Cloud.....	Concordia.....	L. D. Hall, M. D.
Coffey.....	Burlington.....	Wm. Manson, M. D.
Comanche.....	Coldwater.....	John S. Halliday, M. D.
Cowley.....	Winfield.....	Geo. Emerson, M. D.
Crawford.....	Girard.....	Wm. H. Warner, M. D.
Cherokee.....	Columbus.....	J. H. Baxter, M. D.
Decatur.....	Oberlin.....	W. B. Mead, M. D.
Ellis.....	Hays City.....	Hugo B. Kohl, M. D.
Ellsworth.....	Ellsworth.....	H. O'Donnell, M. D.
Ford.....	Dodge City.....	T. L. McCarty, M. D.
Finney.....	Garden City.....	Geo. L. Neal, M. D.
Franklin.....	Ottawa.....	R. S. Black, M. D.
Graham.....	Hill City.....	R. P. Williamson, M. D.
Greenwood.....	Eureka.....	F. W. Watson, M. D.
Greeley.....	Tribune.....	F. R. Moore, M. D.
Geary.....	Junction City.....	George E. Harvey, M. D.
Garfield.....	Ravanna.....	Henry C. Suess, M. D.
Harvey.....	Newton.....	G. D. Bennett, M. D.
Hodgeman.....	Jetmore.....	W. M. Sterrett, M. D.
Haskell.....	Santa Fe.....	J. P. Cowdin, M. D.
Jewell.....	Mankato.....	Walter Crew, M. D.
Johnson.....	Olathe.....	C. G. McKinley, M. D.
Kingman.....	Kingman.....	E. W. Hinton, M. D.
Labette.....	Oswego.....	L. T. Strother, M. D.
Lane.....	Dighton.....	F. L. Rownd, M. D.
Lincoln.....	Lincoln.....	Henry M. Hall, M. D.
Lyon.....	Emporia.....	T. C. Biddle, M. D.
Logan.....	Russell Springs.....	J. A. Norris, M. D.
Marion.....	Peabody.....	C. A. Loosc, M. D.
Marshall.....	Waterville.....	H. Humfreville, M. D.
McPherson.....	McPherson.....	J. E. Rouze, M. D.
Miami.....	Osawatomie.....	E. C. Pace, M. D.
Montgomery.....	Elk City.....	John T. Davis, M. D.
Morton.....	Richfield.....	J. M. Phillips, M. D.
Meade.....	Meade.....	C. Button, M. D.
Mitchell.....	Beloit.....	I. R. Swigart, M. D.
Nemaha.....	Seneca.....	Alice G. H. Anderson, M. D.
Ness.....	Ness City.....	J. N. Venard, M. D.
Osage.....	Burlingame.....	James Haller, M. D.
Osborne.....	Osborne.....	B. F. Chilcott, M. D.
Ottawa.....	Minneapolis.....	J. F. Brewer, M. D.

## COUNTY HEALTH OFFICERS—CONCLUDED.

COUNTIES.	TOWNS.	HEALTH OFFICERS.
Pawnee .....	Larned.....	J. M. Cummins, M. D.
Phillips .....	Phillipsburg .....	Hugh Wallace, M. D.
Pottawatomie.....	Westmoreland .....	T. R. Cave, M. D.
Pratt.....	Pratt.....	O. L. Peak, M. D.
Rawlins .....	Ludell.....	J. L. Constable, M. D.
Reno.....	Hutchinson.....	A. W. McKinney, M. D.
Rooks .....	Stockton.....	W. B. Callender, M. D.
Rush.....	La Crosse.....	Wm. M. Goodwin, M. D.
Russell.....	Russell.....	Joseph W. Robb, M. D.
Saline.....	Salina.....	J. W. Jenney, M. D.
Scott.....	Scott City.....	Joseph F. Bond, M. D.
Sedgwick.....	Wichita.....	P. D. St. John, M. D.
Shawnee.....	Topeka.....	Frank W. Bailey, M. D.
Sheridan.....	Hoxie.....	I. A. Winternitz, M. D.
Sherman.....	Goodland.....	E. E. Burwell, M. D.
Smith.....	Lebanon.....	W. C. Bower, M. D.
Stafford.....	Stafford.....	T. W. Scott, M. D.
Stevens.....	Hugoton.....	C. L. Ebnother, M. D.
Stanton.....	Johnson City.....	C. A. Culver, M. D.
Thomas.....	Colby.....	W. M. Edwards, M. D.
Wabaunsee.....	Alma.....	E. Scheidt, M. D.
Wallace.....	Wallace.....	J. T. Newton, M. D.
Washington.....	Washington.....	J. H. Green, M. D.
Wichita.....	Leoti.....	A. R. Knapp, M. D.
Wilson.....	Fredonia.....	A. W. Cornack, M. D.
Woodson.....	Yates Center.....	H. W. West, M. D.
Wyandotte.....	Kansas City.....	E. W. Haradon, M. D.
		H. M. Downs, M. D.

NOTE.—Since January 1, 1892, the following additions and changes have occurred among County Health Officers:

Anderson .....	D. C. Van Stavern, M. D.....	vice D. M. Craig, M. D.
Chase.....	Frank T. Johnson, M. D.....	vice C. E. Hait, M. D.
Cheyenne .....	F. C. Tracy, M. D.....	vice E. L. Waterman, M. D.
Cloud.....	J. H. McCasey, M. D.....	vice L. D. Hall, M. D.
Edwards .....	Geo. M. Seacat, M. D.....	to fill a vacancy.
Gove.....	J. H. Jones, M. D.....	to fill a vacancy.
Graham.....	Jas. Norrish, M. D.....	vice B. P. Williamson, M. D.
Grant .....	J. H. Lucas, M. D.....	to fill a vacancy.
Hamilton .....	M. C. Boggs, M. D.....	to fill a vacancy.
Harper .....	H. N. Kirkpatrick, M. D.....	to fill a vacancy.
Jackson.....	J. A. Rafter, M. D.....	to fill a vacancy.
Kearny .....	G. C. W. Richards, M. D.....	to fill a vacancy.
Kiowa .....	J. A. Milligan, M. D.....	to fill a vacancy.
Morton .....	E. C. Miller, M. D.....	vice J. M. Philips, M. D.
Neosho .....	G. H. Brown, M. D.....	to fill a vacancy.
Norton.....	N. L. Jones, M. D.....	to fill a vacancy.
Republic.....	J. S. Billingsley, M. D.....	to fill a vacancy.
Rice.....	W. W. Spiers, M. D.....	to fill a vacancy.
Riley .....	B. F. Morgan, M. D.....	to fill a vacancy.
Rooks .....	W. A. Leigh, M. D.....	vice W. B. Callender, M. D.
Shawnee.....	W. A. Williamson, M. D.....	vice F. W. Bailey, M. D.
Sherman.....	F. H. Smith, M. D.....	vice E. E. Burwell, M. D.
Stanton.....	J. E. Whitecraft, M. D.....	vice C. A. Culver, M. D.
Thomas.....	C. H. Martin, M. D.....	vice W. M. Edwards, M. D.

## MUNICIPAL BOARDS OF HEALTH.

CITY.	COUNTY.	SECRETARY OR HEALTH OFFICER.	COMPENSATION.
Barr Oak.....	Jewell.....	Thos. Kirk, jr., M. D., Health Officer.....	No compensation.
Clay Center.....	Clay.....	L. J. Warren, M. D., Secretary.....	\$20 per annum, ea. member.
Emporia.....	Lyon.....	T. F. Fonnannon, M. D., Chairman.....	\$50 per an., Chairman only.
El Dorado.....	Butler.....	C. H. Davis, M. D., Secretary.....	Not stated.
Fredonia.....	Wilson.....	A. C. Flack, M. D., Secretary.....	\$100 per annum.
Fort Scott.....	Bourbon.....	Not reported.....	Not stated.
Garden City.....	Finney.....	F. Cole, M. D., Secretary.....	Not stated.
Hutchinson.....	Reno.....	A. W. McKinney, M. D., Chairman.....	Not stated.
Junction City.....	Geary.....	Not reported.....	Not stated.
Leavenworth.....	Leavenworth.....	C. R. Carpenter, M. D., Secretary.....	\$15 per mo. to members and Sec'y from May 1 to Sept. 1.
Le Roy.....	Coffey.....	J. L. Jones, M. D., Health Officer.....	Not stated.
Oswego.....	Labette.....	P. W. Barbe, M. D., Health Officer.....	Not stated.
Parsons.....	Labette.....	John T. Bradley, M. D., Secretary.....	Not stated.
Pittsburg.....	Crawford.....	Mary E. Gilman, M. D., Health Officer.....	Not stated.
Topeka.....	Shawnee.....	C. C. Bradley, M. D., Health Officer.....	\$35 per month.
Wichita.....	Sedgwick.....	P. D. St. John, M. D., Secretary.....	\$100 per annum.
Washington.....	Washington.....	Geo. H. Cox, M. D., Secretary.....	Not stated.
Yates Center.....	Woodson.....	E. V. Wharton, M. D., Health Officer....	Not stated.

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## LETTER OF TRANSMITTAL.

OFFICE OF THE STATE BOARD OF HEALTH,  
TOPEKA, KAS., January 1, 1892.

*To the Honorable Lyman U. Humphrey, Governor of Kansas:*

SIR—In presenting this, our Seventh Annual Report of the Operations of the State and Local Boards of Health, we are regretfully mindful of its deficiencies and imperfections in many essential respects. But it will be borne in mind by Your Excellency and others interested in the public health service of the State, that the limitations under which we have been placed, both as to financial support and power of action under the law, have precluded any wide or extended scope of inquiry on our part.

It is time, in our judgment, that these limitations should be enlarged, if we would preserve the fruits of our labors thus far, not to say achieve further substantial benefits in the interests of the public health. The field of public hygiene is enlarging constantly and with great rapidity. Public sanitation is taking on a scientific form, and the preservation of the public health and physical welfare of the people have become subjects of greatest public concern, appealing to all classes and conditions of society. It is deemed worthy of wisest statesmanship to consider how best to promote these interests. They cannot certainly be left without a plan. Every point which is won through the enlightenment of the people upon the necessity for wise sanitary measures, or wrested from their ignorance or unconcern, needs to be duly fortified by law; otherwise, there will not only be no advance, but a retrogression and loss of ground, to be regained only by slow and laborious effort.

During the prevalence of an epidemic or other great danger to the public health, the cause of hygiene and sanitation makes greatest progress, moving forward at such times with immense strides. At other times, for the most part, its advance is exceedingly slow, difficult, and unequal. It is indeed a plant of slowest growth, requiring the utmost care, patience, and the wisest discretion in its management. Much may be expected from the free and liberal distribution of tracts and pamphlets and from public speech and the public press. The education of the people, through the wide dissemination of information in a popular form, must ever continue to be our chief reliance. But unless these efforts are supplemented by sound and effective

legal remedies, to which appeal may be had, as a last resort, the great cause of the people will be labored more than advanced.

In the administration of the public health service, it is necessary at times to invade the exclusive territory in which the doctrine of individual rights and the sacred personal liberty is the rule of action. Arguments and admonitions are alike futile. Every encroachment is stoutly resisted. This kingdom, too, must needs be taken by violence. "Civilization," says Lowell, "does sometimes get forward upon a powder cart."

Thus, the plan should be, first, to create an intelligent and responsive interest among the people at large, without which no sanitary improvement worthy of the name can be successfully undertaken; then, with this interest enlisted, protect and maintain the position by legal enactment.

We think that after several years of continuous, painstaking effort on our part to instruct the people upon the practical utility of sound sanitary principles, the effectiveness of further purely educational work in this direction may fairly be considered as of doubtful utility. We have apparently reached the point for a new departure. The need for better legislation in the interest of the public health is patent to all who have given the subject the smallest consideration. It has been dwelt upon and emphasized in every report of this Board. While the present law is widely comprehensive, its many vital omissions have rendered it practically nugatory, except in a few particulars. It needs to be perfected to meet the obvious intent and meaning of the Legislature which framed and enacted it.

The registration of births, of physicians and accouchers, and of infectious and contagious diseases, should be specifically, and in terms, provided for, leaving nothing to inference or uncertainty. As to the latter, no argument is needed to show its immense value as a preventive measure. The obligatory and immediate notification of such diseases, not only by physicians and assessors, but by householders as well, is a measure of the first importance. In this, at least, there is no theoretical subtlety, but the incarnation of practical utility. It is the sheet anchor of preventive medicine. The appearance of small-pox is a reproach to the people of the State, whatever may be said of diphtheria, typhoid fever, scarlet fever, measles, etc. Where the means of protection against a loathsome disease are so safe and simple, their employment should be made obligatory. Compulsory vaccination and revaccination at proper intervals should be required by the law. The children of school age need to be protected, if only to insure the safety of the rising generation.

A measure of scarcely less importance is the compulsory registration of physicians and accouchers, in order that the practice of medicine shall, by so much at least, meet with some regulation. The public health interests of the State, and the general public, should be protected to some extent from the injurious impositions and pretensions of incompetent and dishonest practitioners.

Then there is need for a thorough reorganization and extension of the

public health service. We need more Boards of Health. The State of Minnesota has more than 1,200 of such boards in active, successful operation. There should be a Board of Health or Health Officer in every township and village, all having a common sanitary code, and all in coöperation with the State Board. Better protection should be afforded the country districts, which now receive little or no assistance from the State against the spread of contagious diseases. County Boards of Health have been named in each county, but they have been given no specific duties to perform, and no sufficient authority of law to carry out their own ordinances, or those enacted by this Board. Their duties and responsibilities should be clearly defined, and their ordinances and those of the State Board given the force of law. County Health Officers are poorly compensated, resulting in serious injury to the public health service.

Their appointment, compensation, and removal for cause, should be vested in the State Board of Health. These subjects are more fully discussed in the body of the report, to which we invite your attention.

Finally, we would respectfully invite your attention to the continued and persistent refusal of certain of the counties to discharge the duties and obligations imposed upon them by law in respect of organizing their Boards of Health. The lack of coöperation on the part of those counties, several of them among the most populous in the State, has already seriously crippled the public health service, and is a reproach to the State, as well as a menace to the important interests committed to our supervision.

Respectfully,

G. H. T. JOHNSON, M. D., *President*, Atchison.

D. C. JONES, M. D., Topeka.

J. MILTON WELCH, M. D., Wichita.

ROBERT C. MUSGRAVE, M. D., Grenola.

R. A. WILLIAMS, M. D., Olathe.

ANDREW SABINE, M. D., Garden City.

H. D. HILL, M. D., Augusta.

FRANK SWALLOW, M. D., Valley Falls.

J. W. JENNEY, M. D., Salina.

M. O'BRIEN, M. D., *Secretary*, Topeka.



# PROCEEDINGS OF THE BOARD.

## MINUTES.

TOPEKA, January 20, 1891.

The State Board of Health convened in adjourned session at its office in this city to-day, at 4 o'clock P. M., for the purpose of electing a Secretary to succeed Doctor Redden, resigned, and to discuss the feasibility of attempting to procure additional legislation in the interest of the Board. Present: Doctors Johnson, Jones, Welch, Hill, Swallow, Musgrave, Jenney, Williams, Schenck, and the Secretary; President Johnson in the chair.

The minutes of the last meeting were read and approved.

On motion, it was resolved to proceed to the election of a Secretary, to take office upon the retirement of Doctor Redden, at the close of the present fiscal year. Doctors Jones and Jenney were appointed tellers. The balloting which followed resulted in the election of Dr. M. O'Brien, of Topeka, he having received a majority of the votes of all the members of the Board. The President thereupon announced that Doctor O'Brien had been duly elected Secretary of the Board, to take effect on and after July 1, 1891.

The Secretary elect, having appeared before the Board, expressed his thanks for the honor conferred upon him, and the hope that he would meet the expectations of the Board in his efforts to faithfully discharge the duties of Secretary.

The advisability of seeking additional legislation in the interest of the Board was fully discussed, with the result of committing the subject to the Executive Committee with power to appear before the present Legislature, and do all other needful things in the premises. Doctor Swallow was added to the committee.

The following bills were presented, and referred to the Auditing Committee:

Dr. Swallow, for traveling, and other necessary expenditures, while attending the sessions of the American Public Health Association, at Charleston, S. C., in December, 1890. ....	\$137 00
Dr. Jones, for similar service. ....	128 80
Expenses of members attending present session of the Board:	
Dr. Hill. ....	16 00
Dr. Musgrave. ....	18 60
Dr. Welch. ....	18 24

Dr. Jenney .....	\$14 50
Dr. Swallow.....	5 00
Dr. Williams.....	8 75
Total.....	\$346 89

The Auditing Committee having reported favorably upon all of the foregoing bills, they were, upon motion, duly approved and ordered paid.

After a general discussion of sanitary matters and miscellaneous business, the Board adjourned till February 10, 1891.

#### SPECIAL MEETING.

TOPEKA, February 10, 1891.

The State Board of Health convened at its office in this city to-day, at 4 o'clock P. M., pursuant to adjournment. Present: Doctors Johnson, Jones, Welch, Hill, Schenck, and the Secretary; Doctor Johnson presiding. The minutes of the previous meeting were read and approved.

The Secretary submitted for consideration a proposed memorial to the Legislature, now in session, with a bill intended to remedy the defects of existing law respecting the State and local boards of health. After due consideration, the memorial and accompanying bill were approved, and the Secretary directed to have a sufficient number of copies prepared to reach the Executive and members of the Legislature. The Executive Committee was directed to attend to the introduction of the bill without delay; the memorial to be published in the next annual report.

Doctor Hill submitted a report of his recent visit to Chautauqua county, in the matter of the small-pox outbreak, and Doctor Redden a report of his visit to Lyon county, in connection with a similar outbreak. Both reports were, upon motion, approved and ordered published.

The following bills were referred to the Auditing Committee:

Dr. Hill, expenses visiting Chautauqua county.....	\$35 00
Dr. Redden, expenses visiting Lyon county.....	26 50
Dr. Johnson, expenses attending this session of the Board.....	7 64
Dr. Welch, expenses attending this session of the Board.....	18 24
Dr. Hill, expenses attending this session of the Board.....	16 00
C. W. Douglass, printing memorial to Legislature.....	12 00
J. L. King, P. M., postage.....	10 00
Western Union Telegraph Company, telegrams.....	4 85
Gas Company, gas for office six months.....	6 40
Wells-Fargo Express Company, expressage.....	7 20
Pacific Express Company, expressage .....	75
Type-writer copies of proposed bill.....	4 25
Coal bucket and shovel for office .....	1 00
J. A. Penney, office rent six months, to June 30, 1891.....	120 00
J. E. Broberg, janitor six months, to June 30, 1891.....	30 00
Total .....	\$299 83

The Auditing Committee having reported favorably upon all the bills presented, the same were, upon motion, duly approved and ordered paid.

After a general discussion upon the operations of the Board, as detailed by the Secretary, the Board adjourned.

TOPEKA, June 2, 1891.

The State Board of Health convened in regular quarterly session at its office in this city, at 4 o'clock p. m. to-day. Present: Doctors Johnson, Welch, Jones, Musgrave, and the Secretary; Doctor Johnson presiding. The meeting being without a quorum, was, on motion, adjourned until the day following, at 11 o'clock A. M.

June 3, 1891.

The Board reconvened pursuant to adjournment. Present: Doctors Jones, Welch, Musgrave, Swallow, Williams, and the Secretary. Doctor Musgrave was chosen to preside.

The minutes of the last meeting were read and approved.

The Secretary read his report of the operations of the Board during the preceding six months. The report was approved, and ordered published.

The Executive Committee, having in charge the proposed legislation in the interests of the Board, reported as follows:

Your committee on legislation beg leave to report as follows:

There was no medical legislation enacted by the Legislature of 1891. Several measures of a medical nature were presented, and a few received some consideration, but all failed at some stage of their progress.

There were introduced two or more bills to abolish the State Board of Health; a bill proposing to regulate medical practice; a bill providing for the formation of a new State Board of Health and the regulation of medical practice, and a bill to amend the provisions of our present State Board of Health law. These were the leading measures. Your committee was especially interested only in the last, which, as it antagonized no other interest, and had been, in part, invited by a prominent member of the State Senate, ought to have passed. However, it shared the common fate.

It was remarkable, the sentiment manifested against the attempt to regulate the practice of medicine. Further than this, there existed only the usual indifference to medical matters found here and elsewhere among legislative bodies. This indifference was perhaps more observable in the last Legislature, owing to the all-absorbing political hostility between the two houses. It was a duel for political supremacy all the way through, and scarcely any strictly non-political measures received serious consideration.

Unfortunately, too, the plan of proposed legislation embraced the most pronounced warfare upon State boards generally; among them, the State Board of Health. Your committee, early detecting the prevailing sentiment in this respect, abandoned as hopeless all attempts at procuring medical legislation.

Upon motion, the said report was adopted.

A communication was read from Governor Humphrey, transmitting a let-

ter from the International Congress of Hygiene and Demography, inviting a representation from Kansas at the meeting of the society to be held at London, England, in August of the present year. The Governor having expressed a readiness to commission as delegates such persons as the State Board of Health might nominate, the Board named Doctors Jones, Redden and Williams as such delegates, and the Secretary was directed to certify their selection to the Governor.

It was resolved that Doctor Alexander, Chemist of the Board, be directed to turn in to the Secretary the microscope and appliances now in his possession.

It was resolved, upon motion, that a Committee on Revision and Publication be appointed by the President, to be announced at the next meeting.

In response to the resolution of the State Executive Council, directing the Board to take offices in the capitol building, the following communication was directed to be sent to the secretary of the Council:

June 2, 1891.

DEAR SIR: Respecting the proposed removal of the State Board of Health offices to the State House, we would respectfully invite your attention to the fact that the single room placed at our disposal is wholly inadequate. Our library, already large, is constantly and rapidly increasing; the quantity of supplies necessary to be kept on hand is large, and for these purposes alone one room is necessary; while for the meetings of the Board and strictly office purposes, at least one other adjoining room would be indispensable. You have informed us that the single room referred to is the only one at present available, and we therefore request that the Executive Council rescind its order for our removal until such time as there shall be adequate room. At the same time, responding in good faith to the spirit of economy which we believe suggested the proposed change, we will undertake to provide ourselves with quarters at a cheaper rental — say not to exceed \$200 per annum.

For many reasons, the Board would be glad to have its office in the State House, believing it would be highly advantageous to its interests in various ways to be quartered with the other State officials, thereby being in a position to meet the representative men visiting the State capitol. Therefore, it is in no spirit of resistance to the order of the Council, that we now suggest a delay in its execution. On the contrary, we cheerfully acquiesce in their decision, and will hold ourselves in readiness to move without delay whenever there shall be suitable quarters offered us.

The following bills were referred to the Auditing Committee:

Doctor Welch, expenses in attending this session of the Board.....	\$14 25
Doctor Musgrave, expenses in attending this session of the Board.....	14 35
Total.....	\$28 60

The Auditing Committee having reported favorably upon these bills, they were upon motion, duly approved, and ordered paid.

The election of a President of the Board for the ensuing year being under consideration, it was resolved, upon motion, that Doctor Johnson, the present incumbent, be reflected by acclamation, which was accordingly done.

The following resolution was unanimously adopted:

*Resolved*, That we extend to our retiring Secretary, Dr. J. W. Redden, our hearty appreciation of the faithful manner in which he has always discharged the duties of



his office, and for the uniform kindness, and courteous and fraternal spirit he has always shown to each member of the Board.

Thereupon, the Board adjourned.

TOPEKA, September 16, 1891.

The State Board of Health convened in regular quarterly session at its office in this city, at 4 o'clock P. M. Present: Doctors Jones, Welch, Musgrave, Williams, Jenney, and the Secretary. Doctor Welch was duly chosen to preside.

The minutes of the previous meeting were read, and, upon motion, duly approved.

The Secretary read his report of the operations of the Board since July 1, which was duly approved, and held for discussion.

Upon motion, it was resolved that the Secretary be empowered and directed, with the approval of the Executive Committee, to visit different portions of the State, according to his judgment, in the interests of the Board; his actual traveling expenses, exclusive of railroad fare, to be paid out of the appropriation for sanitary investigations.

A recess was taken at this point till 8 o'clock P. M.

The Board reassembled at 8 o'clock P. M., and resumed the consideration of the business before it. Present: The same members as before.

The following bills of expenditure were referred to the Auditing Committee, viz.:

Dr. M. O'Brien, Secretary, postage and miscellaneous.....	\$155 80
Dr. M. O'Brien, Secretary, miscellaneous.....	26 43
Dr. M. O'Brien, Secretary, rent of office and sundries.....	52 33
Dr. R. A. Williams, delegate to International Congress of Hygiene and Demography, London.....	100 00
Dr. R. A. Williams, expenses attending this meeting of the Board.....	10 50
Dr. R. C. Musgrave, services in contagious-disease cases in Chautauqua county.....	50 00
Dr. R. C. Musgrave, expenses attending this meeting of the Board.....	18 60
Dr. J. Milton Welch, services in connection with outbreak of diphtheria at Wichita.....	25 00
Dr. J. Milton Welch, expenses in attending this meeting of the Board.....	20 24
Dr. J. W. Jenney, expenses in attending this meeting of the Board.....	16 50
Dr. D. C. Jones, services in connection with the meeting of the American Public Health Association, at Kansas City, Mo.....	10 00
Dr. M. O'Brien, services in connection with the meeting of the American Public Health Association, at Kansas City, Mo.....	10 00
Total.....	\$495 40

The said bills having all been approved by the Auditing Committee, they were, upon motion, duly approved and ordered paid.

Doctors Jones, Jenney, Swallow and the Secretary were appointed delegates to the American Public Health Association for this year.

On motion, the Board adjourned till 10 o'clock A. M. to-morrow.

September 17, 1891.

The Board reassembled at 10 o'clock A. M. Present: Doctors Johnson, Jones, Welch, Musgrave, Jenney, and the Secretary; Doctor Johnson presiding.

Doctor Welch made a statement as to the prevalence of diphtheria at Wichita, and the difficulties encountered by the City Board of Health in carrying out its orders and suggestions. After a general discussion of the situation in all its bearings, the following resolution was, upon motion, unanimously adopted:

WHEREAS, Diphtheria of a malignant type, attended with serious mortality, has prevailed for the past six weeks in the city of Wichita, and is still prevailing there in a somewhat abated degree; and

WHEREAS, The City Board of Health, in the exercise of a sound and wise discretion, has recently advised a delay in the opening of the public schools of the city for such a length of time as might be required in the interests of public safety; and

WHEREAS, In disregard of such advice, the said schools have been opened and are now in full operation:

*Resolved*, That the State Board of Health expresses its conviction that the interests of public health demand that all schools in the city of Wichita be at once closed and kept closed, and all public gatherings and assemblages be forbidden, until, in the judgment of the City Board of Health, the danger of further spread of the disease shall have passed.

*Resolved*, That we commend, and express our appreciation of, the zeal, ability and faithfulness displayed by the gentlemen of the City Board of Health of Wichita in the interests of their fellow-citizens, and urge them to continue their efforts until the city shall be rid of the disease.

*Resolved*, That a copy of these resolutions be forwarded to the honorable mayor and city council, the board of education, and the City Board of Health, of Wichita.

The advisability of holding a sanitary convention being under consideration, it was finally resolved that such convention be held in the city of Salina, early in December of this year, and that the Secretary be instructed to make all the arrangements therefor, calling for assistance upon the local member of the Board, Doctor Jenney.

On motion, a committee was named to revise the blank forms now in use by the Board, consisting of Doctors Johnson and Jones and the Secretary.

The report of the Secretary being under consideration, the same was ordered published, and the several measures inaugurated and proposed for the improvement of the service were approved and adopted.

On motion, the Board adjourned, to meet at Salina, Kansas, December 3, 1891.

## QUARTERLY MEETING.

SALINA, December 3, 1891.

The State Board of Health assembled in the parlors of the National Hotel at 6:30 o'clock P.M. Present: Doctors Johnson, Jones, Swallow, Williams, Welch, Jenney, and the Secretary; Doctor Johnson presiding.

The minutes of the previous meeting were read and approved.

The Secretary submitted his report of the operations of the Board since its last meeting. The same was duly approved, and laid over for discussion.

The following bills were referred to the Auditing Committee, viz.:

Expenses of members attending meeting of American Public Health Association, at Kansas City, Mo., October 20 to 23, 1891:

Dr. Johnson.....	\$21 00
Dr. Jones.....	21 00

Expenses of members attending this session of the Board:

Dr. Johnson.....	13 30
Dr. Jones.....	13 00
Dr. Swallow.....	18 50
Dr. Williams.....	20 85
Dr. Welch.....	16 50
Dr. O'Brien.....	10 50

Dr. O'Brien, expenses in attending meeting of American Public Health Association, South Kansas Medical Society, and the sanitary convention, at Salina, Kas..... 33 50

Dr. O'Brien, miscellaneous expenses of office..... 28 22

Dr. O'Brien, rent of office, and postage..... 186 65

Total..... \$383 02

The Auditing Committee having reported favorably upon all of the bills presented, they were, upon motion, duly approved and ordered paid.

The approaching sanitary convention became the subject of discussion. It was resolved, that as many of the members as could possibly attend should do so. The preliminary arrangements, made by Doctor Jenney and the Secretary, were duly approved.

The report of the delegates to the American Public Health Association meeting was presented. It will be found in its appropriate place in this volume.

It was resolved to hold the next sanitary convention at Kansas City, Kas., on the first Thursday in December, 1892.

After a general discussion of the operations of the Board, as presented in the Secretary's report, the meeting, on motion, was declared adjourned.

## REPORT OF THE SECRETARY.

## I.

COVERING THE OPERATIONS OF THE BOARD FROM JANUARY 1, 1891, TO JUNE 3, 1891.

(Presented at the June meeting.)

During the past year, the work of our Board, through the County Health Boards and sanitarians interested with us, has made regular and marked progress. The people are being gradually educated to understand and value the importance and benefits resulting from the control and suppression of contagious diseases, and to appreciate, in some degree at least, the true value of preventive medicine.

It is a well authenticated, but surprising fact, that the health authorities of Washington city, the capital of the nation, only recently ventured to placard and isolate contagious diseases occurring in that city. At first it created a great disturbance, even meeting with decided opposition; but reason and good judgment finally prevailing, the people now not only favor such measures, but demand that still greater powers be conferred on the authorities for the better control and suppression of contagious and infectious diseases.

We have abundant reason to felicitate ourselves upon having thus far successfully withstood the assaults of prejudice and misrepresentation. Our Board, now on a firmer basis than before, may look forward with hopeful assurance of a wider influence and greater usefulness to the people of the State.

The following changes have occurred among the County Health Officers, since our last meeting:

Decatur county.....	Dr. W. B. Mead, vice Dr. A. W. Bariteau.
Labette county.....	Dr. L. T. Strother, vice Dr. E. E. Liggett.
Wilson county.....	Dr. A. W. Cormack, vice Dr. F. M. Wiley.
Lyon county.....	Dr. T. C. Biddle, vice Dr. R. W. McCandless.
Anderson county.....	Dr. D. M. Craig, vice Dr. John A. Henning.
Geary county.....	Dr. Geo. E. Harvey, vice Dr. P. Dougherty.

Chautauqua county has organized its County Board of Health, appointing J. P. Graham, M. D., of Sedan, as Health Officer.

Since our last meeting, single cases of small-pox have appeared in the counties of Pratt, Montgomery, Labette, and Sherman. In each instance the disease was imported from adjoining States, from Colorado chiefly. Owing to the efficient action of the Health Officers of those counties, the disease was early detected, and kept under strict control, with the result of confining it to the first cases.

In Geary county, the disease has appeared in Junction City, thus far num-

bering about 10 cases, without fatality. Under the vigorous means adopted, there will scarcely be any marked extension. In this instance, also, the disease was an importation, and gained a foothold through having been secreted for some time.

In connection with the appearance of small-pox in Montgomery and Sherman counties, the following proclamations are worthy of record, as illustrating the vigor with which contagious disease is attacked in those localities:

SMALL-POX PROCLAMATION BY THE MONTGOMERY COUNTY HEALTH OFFICER.

*To Whom it May Concern:*

WHEREAS, One person at this date is sick of variola or small-pox, and numbers of others have been exposed and are liable to be sick with the disease by reason of such exposure, such persons residing in the townships of Independence and Fawn Creek, in the county of Montgomery and State of Kansas: therefore,

I, J. T. Davis, Health Officer of Montgomery county, State of Kansas, by virtue of the power in me by law vested by the State Board of Health, do hereby proclaim that all the sections contained within the following-described boundaries shall be, and are, from this date declared under quarantine, and all rules and orders to carry out this proclamation must be strictly obeyed so long as they shall be in force.

The sections of land included in this quarantine are described and bounded as follows, to wit: Commencing at the northwest corner of section 35, township 33, range 15 east; running thence south to the southwest corner of section 14, township 34, range 15 east; thence east to the southeast corner of section 18, township 34, range 16 east; thence north to the northeast corner of section 31, township 33, range 16; thence west to the place of beginning, including all lands within this boundary.

All persons residing, either temporarily or permanently, within the lines of quarantine above specified will remain within the boundaries of said lines until orders raising the quarantine are issued by the proper authorities, excepting those who may be properly authorized to come and go; and all persons without the said lines of quarantine are forbidden to go within the prescribed lines, unless duly authorized by the legal authorities.

The sheriff of Montgomery county is hereby authorized and empowered to carry out the provisions of this proclamation, according to law.

J. T. DAVIS, *County Health Officer.*

ACTION OF THE SHERMAN COUNTY OFFICIALS.

The County Commissioners of Sherman county, Kansas, convened at Goodland, May 2, 1891, as a local Board of Health, in the office of E. E. Burwell, County Health Officer, in the city of Goodland, Kas. Present: George Austin, J. H. Hardy, I. Houston, and the County Health Officer, Dr. E. E. Burwell.

The following resolutions were adopted, viz.:

WHEREAS, It has come to the knowledge of the County Commissioners of Sherman county, State of Kansas, that a certain district within said county is infected with small-pox, and that a number of exposures have occurred within said district, to wit: Sections 1, 2, 3, 4, 5, 10, 11, 12, 13, 14, and 15, in township 8, range 32, and sections 34 and 35, township 7, range 33, in said county; and

WHEREAS, The public interests demand that a prompt and vigorous effort be made to stamp out said contagious disease, and to prevent a further spread of said contagion within said county: therefore, be it

*Resolved*, That E. E. Burwell, County Health Officer of said county, be and he is hereby authorized and ordered to establish and maintain a rigid quarantine of said district; and be it further

*Resolved*, That said County Health Officer be authorized to establish such means of communication

between said infected district and the city of Goodland, in said county, as in his judgment will best conserve the interests and safety of the public, and to take such other and further steps as may be necessary in the premises.

PROCLAMATION BY THE MAYOR OF GOODLAND.

WHEREAS. It has come to the knowledge of the city council that a certain district in Itasca township is infected with small-pox:

Now, for the purpose of preventing this disease and its introduction into the city of Goodland, it is ordered by the city council that a strict and rigid quarantine be established against the parties hereinafter named. To enforce the same, the city marshal shall deputize such assistants as may be necessary, to be stationed at or near the territory now infected, to have full power under the laws of the State of Kansas to prevent all persons from coming or communicating with such infected district or territory, or the city of Goodland.

All citizens of the city and county are requested to assist the officials by voice and otherwise in establishing this quarantine, and in its rigid enforcement against the Goodwin family, T. B. Odell and family, Lewis Johnson and family, the Bennett family, on Bagley place, W. T. Thompson, on same place, Wm. Hogeboom and family, and any and all other persons communicating with these in any manner, under penalty of a fine of \$100. Copies of this proclamation to be sent to the parties in the infected district.

A. E. KING, *Mayor*.

Attest: J. M. JORDAN, *City Clerk*.

I have received the following interesting report from Dr. E. E. Liggett, County Health Officer of Labette county:

I have received notification from non-professional sources that there is at present quite an extensive epidemic of scarlet fever in and around the cities of Altamont and Mound Valley, in the center and western part of this county. I have mailed to the mayor of each of these places a package of stamped envelopes, containing a pamphlet on scarlet fever and its prevention, together with pamphlets on other contagious diseases, with the request that he address and mail them to such families as would be most benefited by their perusal. Having drawn liberally on my supply of these pamphlets for the same purpose last year, those remaining were soon exhausted, and I write now to ask that a new supply be sent me at your earliest convenience. These pamphlets seem to me to do good; at least the epidemic of scarlet fever last spring was controlled soon after the broadcast distribution of these pamphlets in the district in which there was, at the time, quite a number of cases. Under these circumstances, would it not be well to have a supplement published, at the State's expense, containing these pamphlets, the most important rules and regulations of the State Board of Health, and such other matters as might be of interest and value to the people? Arrangements might be made with the local or other papers that, upon the outbreak of any contagious disease, dangerous to the public health, in any county or district, the papers distributed in that county or district should have inclosed with each number one of these supplements, during the continuance of the epidemic, and at other times, annually, semi annually, or quarterly, as might appear most advisable to the State and local Boards of Health.

In the matter of the outbreak of small-pox at Sedan, Chautauqua county, Dr. H. D. Hill was directed to proceed to the locality and take such steps as should appear necessary. Doctor Hill's report will be found in the appendix to this report,

Under the stress of the outbreak, the County Board of Health was organ-

ized, and Dr. J. P. Graham, of Sedan, elected Health Officer. Doctor Graham reported, under date of February 2, 1891, that the disease was still spreading, there being, at that time, about 20 cases. He had found difficulty in procuring reliable vaccine virus.

The latest information from that quarter is contained in the leading county newspaper, the *Sedan Times*, of February 6, 1891. It is as follows:

SMALL-POX.

"When this paper went to press a week ago to-day (Thursday), four cases were all that had been reported. Up to this date (February 5), 25 cases have been reported, including the four given out last week.

"There are now 22 cases, as follows: Crandall's three children, J. B. Adams, wife, and two children, Mrs. John Myers and two Myers boys, J. J. Adams, Levi Adams, Noah Adams, Martha Adams, Mrs. D. A. Loring, W. T. Adams and wife, Mrs. Isaac Guest, Edgar Wheeler and son James, Mrs. Col. Donelson, and Mrs. D. M. Hitchcock. The latest report is, that these people are all getting along very well, and that Jake Adams, W. T. Adams, and some of the others, are already out of danger.

"On last Friday, Doctor Hill, a member of the State Board of Health, came to Sedan, and, having investigated the small-pox cases and acquainted himself with the situation, appointed Doctor Graham as temporary Health Officer of Chautauqua county, and issued a quarantine proclamation.

"On Monday, the County Commissioners met, and added their quarantine proclamation to the list, appointing Ben Adams as a board of health policeman, to enforce the conditions of the quarantine, and employing Al. Koonse to run a supply wagon to the quarantine line from Sedan. The following persons were employed as nurses: Mrs. John Loyd, Z. E. Goodneal, Hiram McAffe, and Robert Marshall, of Chautauqua Springs. The last named, we are told, has had great experience as a nurse in small-pox cases.

"While the situation is very bad, in fact appalling, we think we are justified in making the statement that the number of cases now reported will not be greatly increased, and that there is encouragement and reasonable grounds for the hope that no more deaths will occur; the latest reports from the afflicted neighborhood justify this belief.

"The disease is still confined to the Grafton neighborhood, no other cases in the county having been reported. While the city authorities were at first criticised for their action in quarantining the city against the disease, we do not believe that there is at this time a man, woman or child but will acknowledge that they did right; they certainly did what they thought was best, and are entitled to credit for their prompt action. It is too late, and has been for several days, to suggest precautionary measures that might have been better. Every citizen should uphold the officers in their efforts to prevent the spread of the terrible plague, and blot out its foul existence."

The following condensed abstracts, from the quarterly reports of the County Health Officers, deserve mention:

In Decatur county, during the first quarter of the year, scarlet fever, la grippe and whooping-cough have been prevalent, but mild and easily controlled. General sanitary condition good.

In Crawford county, 72 deaths, 68 births and 87 marriages have been reported. The general sanitary condition of the county and public buildings is excellent.

In Logan county, during the first quarter of 1891, there has been an epidemic of acute catarrhal and lung affections, the greatest number of cases occurring during the last of February and in March. Beginning as an influenza, it often terminated in pneumonia. Quite a number of deaths have resulted from the above, but the fatal cases were mostly among the aged and very young children. It is still raging, and bids fair to hold on as long as cold, damp weather continues.

I consider the above due to the great amount of moisture, and the frequent and sudden atmospheric changes. In children the disease nearly always showed a tendency to tonsilitis and pharyngitis, and in some cases diarrhoea. We have had no epidemics of any of the eruptive fevers. With the exception of the above, the general sanitary condition is very fine.

McPherson county reports 35 deaths, 9 births, and 28 marriages. The jail is in as good sanitary condition as is usual with places of confinement. Prisoners are treated humanely and well fed. The general sanitary condition of the county, I think, is good. There have been a few cases of whooping-cough, scarlatina, and diphtheria, but I have been unable to get the number. La grippe, in a mild form, has prevailed quite generally. A few deaths have occurred from this cause and other complications. It continues to be impossible to gather data from which to make a correct report. Physicians pay but little attention to reporting diseases and deaths; they seem to think they have done well when they have reported births. Our undertakers report in full, and from them, in most cases, we get the causes of death; but, in nearly all cases of recovery, we fail to secure any data. I am still urging the claims of the Board, and note with pleasure occasional improvement. Shall continue to put forth my best endeavors to bring the work up to a good standard in our county.

Sherman county reports 12 deaths, 16 births, and 13 marriages. La grippe, pneumonia and rheumatism are reported as prevailing. The sanitary condition of the county is first class; no sanitary improvement necessary.

Thomas county reports 14 deaths, 20 births, and 10 marriages. No epidemics have prevailed in any portion of the county. The sanitary condition is quite good. During January, February, and March, a few cases of diphtheria and a light form of la grippe, endemically scattered about, but no deaths whatever from these causes. We have lost more cases from worn-out life, or general failure of the system by age—such as is classed by physicians as debility or heart failure, and from puerperal diseases. An occasional case of typhoid fever, occurring among debilitated persons. The shock of winter has been severe and prostrating among that particular class of people more easily brought under the influence of colds and inclemencies, when slightly exposed, in poorly-constructed houses, with warmth scantily supplied by night and day. Our water supply is generally quite good in quality. Wells generally bored, and from 100 to 200 feet deep; water brought to the surface by pumps and windmills. Privation and squalor,



too, have a hand in the field of destruction, as the mental depression arising from sore embarrassments and bodily wants must be a co-worker in ruining the health of body and mind.

Interstate notifications have been received of the presence of small-pox in Connecticut, Florida, Illinois, Pennsylvania, Tennessee, Wisconsin, and Canada. No special action demanded from our Board in these cases.

I have received the following interesting report of death from Dr. A. W. Sellard, of Scranton, Osage county:

Name, Margaret Shockey; sex, female; color, white; age, 96 years, 4 months, 26 days; occupation, housekeeper; date of death, February 20, 1891, 4 p. m.; widow; nationality, and place where born, American, born in Virginia; how long resident in this State? 15 years; place of death, Fairfax township, Osage county, Kansas; cause of death, pneumonia; duration of disease, five days; place and date of burial. Highland cemetery.

Doctor S. writes:

"The deceased lived six miles southeast of this place, with her son, who is an intelligent, well-to-do farmer. There is no doubt about the age as given."

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In concluding this, my seventh annual and twenty-first quarterly report to this Board, I wish to express my high appreciation of the uniform kindness, courtesy and assistance received from the President and other members of the Board, during the entire time since its organization, now 6 years and 2 months. It is a source of gratification to me that I still retain the warm, personal friendship of all of the ex-members of the Board. I can earnestly say that, during the entire period, the chief object for which I have labored has been the elevation of the work of this Board, the extension of preventive medicine, and the control and suppression of contagious and pestilential diseases, thereby securing for the people of all ages, classes, and conditions, the blessings of healthful and happy homes.

## REPORT OF THE SECRETARY.

## II.

COVERING THE OPERATIONS OF THE BOARD FROM JULY 1, 1891, TO SEPTEMBER 16, 1891.

(Presented at the September meeting.)

The following changes among the County Health Officers have been noted since your last meeting, viz.:

Ellsworth county . . . . .	Dr. H. O'Donnell, vice Dr. R. L. Doig.
Graham county . . . . .	Dr. B. P. Williamson, vice Dr. I. Ion. Ardery.
Greenwood county . . . . .	Dr. F. W. Watson, vice Dr. A. T. Higgins.
Hamilton county . . . . .	Dr. J. N. Slown, vice Dr. R. C. Dryden.
Hodgeman county . . . . .	Dr. W. M. Sterrett, vice Dr. J. K. Miller.
Logan county . . . . .	Dr. J. A. Norris, vice Dr. H. B. B. Montgomery.
Pottawatomie county . . . . .	Dr. T. R. Cave, vice Dr. J. S. Spangler.
Pratt county . . . . .	Dr. O. L. Peak, vice Dr. T. McElwain.
Rooks county . . . . .	Dr. W. B. Callender, vice Dr. D. J. Donnell.
Sedgwick county . . . . .	Dr. P. D. St. John, vice Dr. E. B. Rentz.
Woodson county . . . . .	Drs. West & Haradon, vice Dr. S. J. Bacon.

Mitchell county has been added to the list of those having health organizations, with Dr. I. R. Swigart, of Beloit, as Health Officer.

The health of the State, as a whole, is surprisingly good. With every element and condition favorable to disease, furnished by the unusually heavy and long-continued rains of the spring and summer, with intervals of excessively high temperature, we have happily enjoyed an immunity from sickness scarcely to have been expected. I have reports from 66 counties. The Health Officers of Anderson, Bourbon, Butler, Brown, Chase, Comanche, Clay, Crawford, Cloud, Cowley, Coffey, Decatur, Ellis, Ellsworth, Finney, Greeley, Garfield, Geary, Greenwood, Harvey, Hodgeman, Hamilton, Jewell, Johnson, Lyon, Lincoln, Logan, Lane, Labette, Linn, Montgomery, Marshall, Marion, Miami, Mitchell, Meade, McPherson, Nemaha, Ness, Osborne, Osage, Ottawa, Pratt, Phillips, Pawnee, Pottawatomie, Rawlins, Russell, Rooks, Reno, Rush, Stanton, Sherman, Smith, Scott, Stevens, Sheridan, Sedgwick, Shawnee, Saline, Thomas, Wabaunsee, Wilson, Wallace, Wichita and Woodson report the general sanitary condition of their respective counties as being all that could be desired, and pronounce the state of the general health as "good," "remarkably good," "extremely good," "never better," "almost perfect," etc., etc.

Dr. S. E. Reynolds, of Clay Center, Health Officer of Clay county, states that the general health was never better since 1879, the mortality being under any former year since the records have been kept.

Dr. W. B. Mead, of Oberlin, Health Officer of Decatur county, writes:

"No epidemic or disease dangerous to health. The excessive rainfall in this re-

gion, and consequent rank growth of vegetation, would have seriously endangered the public health had not due precautionary measures, such as drainage, mowing down weeds, etc., been taken. Fearing the mephitic miasm, arising from decaying vegetable matter, I have seen to it that every part of this city was kept scrupulously clean, and the sunlight freely admitted."

Dr. H. B. Kohl, of Hays City, Health Officer of Ellis county, writes:

"Very little sickness during the past six months. Our Russo-German citizens never consult a physician, and few data can be obtained from that source. It is difficult to make these worthy, industrious people understand that the health department of the State is interested in their welfare. No reports of deaths among them, although to my personal knowledge there have been nine deaths."

Dr. H. O'Donnell, of Ellsworth, Health Officer of Ellsworth county, writes:

"During the last quarter the people have enjoyed a remarkable immunity from all diseases, as compared with previous years. One isolated case of scarlet fever. Pthisis appears to be on the increase, having been almost unheard of in this section until quite recently. No development of endemic diseases, but, taking into consideration the exceptionally heavy rainfall and resulting rank vegetation, coupled with the immense acreage of land freshly broken, I anticipate, this coming fall, a large increase in miasmatic diseases."

Dr. J. N. Slown, of Syracuse, Health Officer of Hamilton county, writes:

"No contagious diseases. Malarial and typho-malarial the principal diseases. I think four-fifths of the deaths in this and adjoining counties are from "mountain fever." The opening of irrigating ditches, and the rank vegetation which follows their use, the alternate stagnation and evaporation of their waters, is undoubtedly a source of malarial poison, and a remedy has not yet been suggested. The county is particularly free from tuberculosis, no case ever having been acquired here, while quite a number have been cured, or at least benefited, by a residence here. Asthmatics find relief here which they say they can get in no other county.

"The city of La Junta, Colorado, has, at this writing, several cases of small-pox, and due precautionary measures are being taken to prevent its introduction among us."

Dr. J. W. Robb, of Russell, Health Officer of Russell county, writes:

"A remarkably healthy county. There is less serious disease than in any other spot of its size on the face of the earth, so far as I am informed. It should be a health resort, especially for malarial and pulmonary diseases."

Dr. A. W. McKinney, of Hutchinson, Health Officer of Reno county, writes:

"The county is unusually free from disease. We have all the elements needed, in the way of rank vegetation, rainy and damp weather, abundant fruits and vegetables, all of which are premature in their development and enormous in size. With all this, bowel diseases are the exception. No epidemics; only good health and idle physicians."

Dr. I. A. Winternitz, of Hoxie, Health Officer of Sheridan county, writes:

"Measles appeared in the vicinity of Hoxie, but was promptly checked. A remarkable freedom from infantile diarrhoeal troubles, owing to the cool and pleasant weather. There has been an enormous crop of small grain raised in this county.

and corn promises the largest yield known in the history of the county. This will have much to do, in my judgment, with placing the people of the county in a better sanitary condition."

Dr. F. W. Bailey, of Topeka, Health Officer of Shawnee county, writes:

"At no time within the last three years has the county enjoyed so great an immunity from contagious diseases. The present sanitary condition could not well be improved upon."

Dr. A. R. Knapp, of Leoti, Health Officer of Wichita county, writes:

"The sanitary condition and general health excellent; our immunity from contagious diseases simply wonderful. Health and prosperity the most prominent features of Wichita county this year."

Measles has visited the counties of Anderson, Bourbon, Hodgeman, Lane, Linn, Montgomery, Marion, Pottawatomie, Smith, Sheridan, and Shawnee. Dr. J. A. Colley, of Farnsworth, Lane county, has submitted an interesting account of the appearance of this disease in that county, which appears hereafter, in this volume.

Scarlet fever has been present in the counties of Bourbon, Ellsworth, Geary, Hodgeman, Logan, Linn, Ottawa, Rush, and Shawnee. Dr. L. T. Strother, of Mound Valley, Health Officer of Labette county, has furnished a report of this disease in his county, which will be found appended.

Whooping-cough has prevailed to some extent in the counties of Greeley, Jewell, Montgomery, Marion, Meade, Rush, and Sherman; diphtheria in Cowley, Jewell, Lincoln, Meade, Sedgwick, and Shawnee counties. The city of Wichita, Sedgwick county, is suffering from a serious outbreak of this disease at the present time, several deaths having already occurred. A City Board of Health has been appointed, and vigorous measures are being adopted, which, it is hoped, will soon prevent further extension.

For a history of the outbreak of this disease in Shawnee county, see appended report of Dr. F. W. Bailey, of Topeka, County Health Officer.

Small-pox was present in Junction City, Geary county, at your last meeting, and one case had occurred in Shawnee county. The disease has since wholly disappeared from the State. For a history of the outbreak in Geary county, see report of Dr. Geo. E. Harvey, of Junction City, County Health Officer, hereto appended.

Malarial diseases have appeared in Marshall, Stevens and Woodson counties; and typhoid fever in Lyon, Mitchell, Wallace and Woodson counties.

La grippe is reported from Anderson, Hodgeman and Logan counties; and diarrhoeal diseases from Bourbon, Cowley, Greeley and Jewell counties. Cholera morbus, from Cloud county.

The fatality attending these various diseases, with the exception of diphtheria, has been inconsiderable.

Dr. O. L. Peak, of Pratt, Health Officer of Pratt county, has been called upon to abate nuisances arising from dead carcasses, pig-sties, etc.

Dr. F. W. Watson, of Eureka, Health Officer of Greenwood county, complains of the quality of the water supplies in that county.

Dr. T. C. Biddle, of Emporia, Health Officer of Lyon county, states that the heavy rains of the early spring have left many stagnant pools in that section.

Dr. J. F. Brewer, of Minneapolis, Health Officer of Ottawa county, complains that sewage is allowed to run along the main thoroughfares of Minneapolis, making the streets, at times, very offensive.

Dr. C. A. Culver, of Johnson City, Health Officer of Stanton county, complains of a permanent offensive odor about the county jail building.

Dr. S. E. Reynolds, of Clay Center, Health Officer of Clay county, states that the jail building of his county is ill-adapted to its use.

Dr. L. D. Hall, of Concordia, Health Officer of Cloud county, makes a similar statement as to the jail of that county, and adds that it is unfit for the jailer's family or prisoners.

Dr. H. M. Hall, of Lincoln, Health Officer of Lincoln county, reports the sanitary condition of the court-house and jail to be very bad, and likely to remain so.

Dr. James Haller, of Burlingame, Health Officer of Osage county, states that a new poor-house is needed in his county.

Dr. E. E. Burwell, of Goodland, Health Officer of Sherman county, complains of the jail building, but states that it is being improved, at his request.

Dr. I. A. Winternitz, of Hoxie, Health Officer of Sheridan county, states that the sanitary condition of the jail is very bad; scarcely fit for the confinement of hogs, much less men.

Of the 40 counties which have thus far failed to report, only three are believed to have health organizations, viz.: Ford, Graham, and Kingman.

The counties of Allen, Atchison, Barber, Barton, Chautauqua, Cherokee, Cheyenne, Clark, Dickinson, Douglas, Doniphan, Edwards, Elk, Franklin, Gove, Grant, Gray, Harper, Haskell, Jackson, Jefferson, Kearny, Kiowa, Leavenworth, Morris, Morton, Neosho, Norton, Reno, Republic, Riley, Stafford, Sumner, Seward, Trego, Washington and Wyandotte have either never organized their Boards of Health, or have permitted such organizations to lapse. With a view of bringing the delinquent counties to obey the laws in respect of appointing Health Officers, the County Commissioners of those counties have been addressed as follows:

CIRCULAR LETTER TO COUNTY COMMISSIONERS.

TOPEKA, September 10, 1891.

GENTLEMEN: I have been directed by the State Board of Health to invite your earnest attention to the manner in which the laws relative to the appointment of a Health Officer have thus far been disregarded in your county, to the serious impairment of the public-health interests of the State.

Under section 7 of the act creating a State and local Boards of Health, (chapter 129, Laws of 1885,) a local Board of Health exists, by positive enactment, in every

county of the State. The section reads: "The County Commissioners of the several counties of this State shall act as local Boards of Health for their respective counties. Each local board thus created shall elect a physician," etc. It is not, therefore, a question as to the creation of a Board of Health for your county, for that has already been done. It is only required that you shall organize and elect a Health Officer, which, when performed, will place you in harmonious and effective coöperation with the State Board, contributing to, and receiving benefits from, the combined experience of all similar boards throughout the State and elsewhere.

We would respectfully urge upon you the necessity for immediate compliance with these requirements, in order that you may enable the health organizations of the State, whose effectiveness has been seriously diminished through lack of your coöperation, to accomplish the purposes for which they were created.

The great and lasting benefits of an efficient Board of Health are no longer subjects of conjecture or doubt among intelligent people; they are incontrovertible facts. In the presence of an outbreak of epidemic disease, the utility of such a board is strikingly illustrated. It is believed that such outbreaks may be prevented, or at least restricted within the narrowest possible limits, by the timely and skillful management of the first case or cases that occur.

But when, unhappily, an outbreak of such disease occurs in a community which is without organization to oppose its progress, the most precious time is lost in preparation, until that which by prompt action could easily have been controlled at its first appearance has, through neglect, spread into a costly and fatal epidemic, ravaging the community as by fire and sword. This is no imaginative picture. The like has occurred a countless number of times, and will doubtless again occur. It is at least unsafe to assume that it will not occur because of the present immunity. The restless activity of our people, and the rapidly-increasing facilities for the widest intercommunication, furnish a constant menace to the most-favored communities, calling for unwavering vigilance on the part of those whose duty it is to guard the public health. It is a position of the gravest responsibility. The people, for whose benefit the laws were enacted, have the right to expect that their mortal enemy shall not enter among them unchallenged.

Nor is it alone in the presence of epidemic disease that Boards of Health find their opportunity for usefulness. Our enemies are frequently of our own household and not always from abroad. There is need for maintaining a continuous health service. To preserve the purity of the running streams, and guard from pollution the sources of our water supplies; to provide for the proper disposition of the garbage and excreta of towns, or wherever there exists a compact population; to prevent the unwholesome adulteration of food products and drink; to abate nuisances dangerous to the public health; to see that no burial is made except upon a physician's return of death, in due form; and that the official records shall contain a full and complete statement as to the paternity, nationality and legitimacy of every birth within their jurisdiction—these and other kindred duties, in the interests of the health, happiness and material progress of our people, to be skillfully performed only by Boards of Health, will amply attest their right to continuous existence.

Much depends upon the selection of a proper person for the position of Health Officer, and should you kindly determine to give favorable consideration to our request, we hope that great care will be exercised in this respect. Lazy, indifferent and inefficient Health Officers, without zeal for their duties or discretion in their performance, have misled the people in matters of public sanitation instead of educating and elevating them, and brought an honorable position into undeserved disrepute. The law prescribes that preference shall be given to adepts in sanitary

science. In addition to this, the Health Officer should possess a sound judgment and the wisest discretion. Thus equipped, his light will shine, reflecting his almost indispensable usefulness throughout the community, which will not only tolerate, but encourage and applaud him in his work. Pay him liberally.

At the same time, the following communication was addressed to the mayor and council of every incorporated city in the State. It is obviously of the greatest importance that the health of our cities should be placed in the hands of competent Health Boards. The city of Leavenworth has only recently organized a Board of Health, and the same is true of Wichita. Kansas City, whose need for such a board is certainly no less than any other city in the State, is yet without one, although the prospects are favorable, as we are assured by Mayor Hannon, who has cordially interested himself in all matters pertaining to the public-health interests.

Leading physicians throughout the State, including the county and other Health Officers, have been urged to use their influence toward the appointment of municipal Boards of Health.

CIRCULAR LETTER TO CITY OFFICIALS.

TOPEKA, September 11, 1891.

GENTLEMEN: We would respectfully urge upon you the necessity for the early adoption of some method for the thorough registration and preservation of the vital statistics of your city.

This may best be accomplished through the agency of a Board of Health, the secretary of which might be charged with the superintendence of the work. It need not add materially to the city's expenses, while it must be of the greatest value to her future material interests. The utility of an efficient Board of Health in every city or center of compact population is unquestioned. There is a like full agreement as to the importance of vital statistics, which have been called the eyes of a Health Board, because they furnish an unerring indication of the dangerous and unhealthful places. Modern sanitary science owes its existence to the registration of deaths and the localization thereby of insanitary conditions. The statistics are of no less value from a medico-legal standpoint, and are eagerly sought after by the legislator, political economist and student everywhere.

As applied to your city, the utility of vital statistics would perhaps be more apparent as the city advances in age, wealth, and population, when questions of inheritance, identity and legitimacy become more frequent. But at the present time there is every reason why the official records should contain at least a full and complete statement of the paternity, nationality and legitimacy of every birth, and the fact and cause of every death occurring within the city's limits. A burial permit, based upon a physician's return of death, in due form, should be an inviolable requirement in every case of burial. The citizen is entitled to a fair chance for his health and life, and the fact that a physician must make an authoritative death return calls for the careful study of disease, and must lead to fuller details of the causes of sickness. Altogether, it is not much more than is required for the proper recording of a mortgage.

Wide circulation is given to the publication of facts pertaining to the health rate and death rate of localities, and public health is measured by the standard thus presented.

Already, in the larger cities, the collection of these statistics is receiving commendable attention, but the need is no less in the smaller cities, rapidly becoming larger, and should become general throughout the State.

It is believed that a comparison of the death rate and the causes of death in Kansas with similar statistics in other States would demonstrate its superior healthfulness, and thereby direct attention to it as a desirable place of residence from a sanitary stand-point.

We venture to submit for your consideration a model ordinance which would probably cover the case, and we would be pleased to hear from you on the subject.

[The "model ordinance" referred to, containing nothing more than health ordinances in general, is not given herein.]

From the reports of Health Officers, no fact is more apparent than the failure of physicians to comply with the law and the rules of the Board, in respect of reporting the births and deaths occurring in their practice. In nearly every report from Health Officers this complaint is made. There is, seemingly, in the minds of physicians throughout the State, a misapprehension as to their obligations in this respect. It has been repeated again and again, until even the faith of the Health Officers has been shaken, that such reports cannot be compelled without due compensation therefor.

In order to disabuse the minds of all concerned on this important point, the following communication has been addressed to the several County Health Officers:

CIRCULAR LETTER TO COUNTY HEALTH OFFICERS.

TOPEKA, September 15, 1891.

DEAR DOCTOR: The increasing difficulty in procuring reliable vital statistics, and other information relative to the public-health interests of the State, renders it necessary on the part of the State Board of Health, which is charged with the supervision of these interests, to take such action as shall compel a compliance with the law on the part of all concerned.

You are, therefore, hereby requested to bring this subject to the attention of your board with as little delay as practicable, and to give notice by circular and through the newspapers to all delinquents, of your intention to commence proceedings against them on and after a certain named date. Doubtless you have already acquainted them with what is required, but it is best to give this final notice, in order to guard against injustice to any well-disposed, innocent offender. It is difficult to believe that any sound, self-respecting person, being fully advised of the law's requirements and of your intention to institute legal proceedings for their enforcement, will deliberately stand out upon a mere quibble against the obvious intent and meaning of the law, and place himself in an attitude of defiance thereto, besides subjecting himself to the suspicion of desiring to conceal the ensualties occurring in his practice, or opposing the promotion of the health interests of his fellow-citizens. On the contrary, it is confidently expected that all concerned will feel a professional and patriotic interest in the elevation of the reputation of the State, and coöperate cordially to that end.

The State Board of Health has thus far labored patiently and hopefully to accomplish the purposes for which it was created, through the education of the people as to the utility of those purposes, being loth to appeal to the law for the enforcement of provisions so obviously ordained for the public good. But its forbearance having been construed into indifference or lack of power, it can no longer, in justice to itself, avoid the issue with those who have selfishly and inexcusably ruined it.

Please confer with your county attorney on this subject, and take the first case (using prudence and good judgment,) which presents itself after the date appointed



in your notice. Communicate with us frequently, that we may be advised of your proceedings.

We suggest the inclosed as a circular which may cover the case. Please inform us how many copies you will require to reach the physicians of the county.

Wherever physicians and others report to a municipal board, it is sufficient.

Your prompt and resolute compliance with our request is confidently expected.

[The circular referred to, being unimportant, is not given.]

The attitude of the Board upon this very important question being thus generally made known, the effect will probably be beneficial.

However, I apprehend that the physicians are not solely to blame for the present unsatisfactory condition of the health service. The County Health Officers are not all in harmony with us; at least, all are not zealous in the performance of their duties, several contenting themselves with shifting the blame upon the physicians and complaining of the inadequacy of the law. Doubtless the law is defective, but no law yet devised has sufficiently met every indication, and no law ought to be enacted which should seek to disregard a strong, resolute personality on the part of the Health Officer as its main stay and support. The proportion of law required in these cases is in the inverse ratio to the capacity and fitness of that official.

Physicians and others will not willingly report to weak and irresolute Health Officers, no matter what the law may require; while, on the other hand, few will fail to coöperate, regardless of fine distinctions of law, with the official whose integrity of purpose and resolute and impartial administration of the duties of his office, have become generally recognized.

Therefore, before more law shall be enacted, we should see to it that what law we have is faithfully followed. To this end, it is necessary that we should proceed against delinquent County Health Officers, or our circulars and ordinances will be issued in vain.

Many of the blank forms, now in use by the Board, are complained of as being unnecessarily large and cumbersome. The labor of reporting statistics should be made as light as possible, for obvious reasons, and I suggest a modification of several of the forms, especially of the certificates of birth and death, and the undertakers' return of burial cases sold. The marriage return blank is also unnecessarily comprehensive, and the same is true of the condensed return of deaths. All of these should be simplified to the last degree, consistent with efficient service.

Under the recent law respecting public printing, we are admonished to practice the closest economy in the use of blanks. In this connection, the following communication has been addressed to the several County Health Officers:

CIRCULAR LETTER TO COUNTY HEALTH OFFICERS.

TOPEKA, September 1, 1891.

DEAR DOCTOR: I send you to-day a supply of blanks for the service of your office; also a supply of pamphlets covering the rules and regulations of this Board, the duties and powers of local Boards of Health, and the health laws of the State.

The use and disposition of the blanks, except in obvious cases, will be seen from the printed notes on each; but, in case of doubt or misunderstanding, refer to this office.

I assume that you already have a record-book of vital statistics, the property of the county.

It is absolutely necessary you should use every precaution against wastage or loss of these blanks from any cause whatever. The expense of furnishing them has already grown to be a considerable item, and must hereafter be kept within the closest limit of proper service requirements. Should you cease to be Health Officer of the county, please turn over to your successor the supply left in your hands, taking his receipt therefor. In like manner, keep an exact account of those you send to the physicians of the county.

We confidently rely upon your cordial coöperation in this, as in all other matters pertaining to the duties of our respective positions, and the promotion of the object for which our boards were called into existence.

Reports have been received from the various State Boards of Health, and monthly bulletins of health from the Province of Quebec, States of Maine, Connecticut, Louisiana, North Carolina, Ohio, and Tennessee; and from the cities of Portland, Me., Baltimore, St. Louis, New York, New Haven, Mansfield, Ohio, San Antonio, Texas, Minneapolis, Minn., Buffalo, and Kansas City, Mo.

Weekly abstracts of sanitary reports from consuls and other officials stationed abroad, or on the borders of our own country, have been received from the United States Marine Hospital Service.

Interstate notifications have been received of the presence of small-pox at St. Paul, Minn., Atherton, Jackson county, Mo., and Cheboygan, Mich. Upon receipt of the notice of the outbreak of the disease at Atherton, we notified the authorities of Leavenworth county and city, Atchison county and city, Wyandotte county and Kansas City, Miami and Johnson counties.

On the 1st of July, the Board was not only without funds, but was really in arrears; without stationery or postage, and several hundred of the Sixth Annual Report remaining undelivered. Worse than this, a considerable number of these reports which had been sent to county clerks and Health Officers by express, charges unpaid, in the hope that the books would be deemed of sufficient value to warrant the payment of these charges, were returned, or declined, until the charges should be prepaid.

The monthly report heretofore required has been discontinued, the quarterly report being deemed sufficient for the present.

A communication has been received from Mr. P. Walsh, General Baggage Agent A. T. & S. F. Railroad Company, requesting certain alterations to be made in our blank forms for the transportation of corpses, in order to make them conform with the rules adopted by the national conference of general baggage agents. The request appears reasonable, and should be granted; the required changes to be made when the present supply of the blank in question shall be exhausted.

Your Secretary has received notice of his appointment to membership in

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the local committee having charge of the arrangements for the approaching meeting of the American Public Health Association, at Kansas City, Mo. A meeting of the committee was called for September 14, 1891, and I deemed it best to accept the appointment and attend the meeting, relying upon your approval.

## REPORT OF THE SECRETARY.

## III.

COVERING THE OPERATIONS OF THE BOARD FROM SEPTEMBER 16, 1891, TO  
DECEMBER 31, 1891.

(Presented at the December meeting.)

The personnel of the Board has been changed since our last meeting, through the appointment, on October 16, 1891, of Dr. Andrew Sabine, of Garden City, to membership thereon, vice Dr. W. L. Schenck, resigned.

The following-named counties have organized their Boards of Health since our last meeting, and appointed Health Officers as follows, viz.:

Atchison county.....	Dr. C. H. Linley.
Barber county.....	Dr. J. D. Karr.
Chautauqua county.....	Dr. W. T. Courtwright.
Cheyenne county.....	Dr. E. L. Waterman.
Cherokee county.....	Dr. J. H. Baxter.
Franklin county.....	Dr. R. S. Black.
Haskell county.....	Dr. J. P. Cowdin.
Kiowa county.....	Dr. J. A. Milligan.
Morton county.....	Dr. J. M. Phillips.
Stafford county.....	Dr. T. W. Scott.
Wyandotte county.....	Dr. H. M. Downs.
Washington county.....	Dr. J. H. Green.

Inasmuch as our communications with the delinquent counties proved ineffective, save in a few instances, the advice of the Attorney General of the State was sought in the premises. His response is given in the following, our second, communication to the delinquent counties:

## CIRCULAR LETTER TO COUNTY COMMISSIONERS.

TOPEKA, October 31, 1891.

GENTLEMEN: Referring to our recent communication, in which we requested your compliance with the law creating a State and local Boards of Health, and to which we have thus far received no reply, we respectfully invite your attention to the following communication from the Attorney General of the State:

## OPINION OF THE ATTORNEY GENERAL.

STATE OF KANSAS, OFFICE OF ATTORNEY GENERAL,  
TOPEKA, October 15, 1891.

Dr. M. O'Brien, Secretary State Board of Health, Topeka:

DEAR SIR—Replying to your communication of October 13th, would say that, where County Commissioners neglect to do their plain duty, as required by the law establishing County Boards of Health, the only remedy that I know of would be to commence an action against them in the Supreme or District Court, for a mandamus to compel them to act. I would suggest that your Board notify the County Commissioners of the counties which have been remiss in their duty in this respect, that unless they immediately elect a Health Officer, as required by law, the State Board will make application to have writs of mandamus issued to compel them to do so.

I would further suggest that, if this is not sufficient, you report the matter to the Governor, and let him instruct this office to proceed in the matter.

Yours truly,

(Signed) JOHN N. IVES, Attorney General.

Under the advice therein contained, we hereby repeat our request that you proceed, without unnecessary delay, to organize as a Board of Health and elect a Health Officer, preference to be given to a physician, skilled in sanitary science. In this connection we would invite your attention to what is stated on this subject in our previous communication. We suggest that it would not be a substantial compliance with the law to appoint a Health Officer in name, only, or without compensation, or to do service only during epidemics or lesser emergencies, or to do less than his whole duty in every respect. Such officials sometimes act as if their sphere of usefulness were circumscribed by the boundaries of the county-seat, or of their own place of residence, to the almost total neglect of other portions of the county.

The practice of combining the office with that of county coroner, which is of a political character, should be discouraged. The duties of a County Health Officer, while apparently of the same general nature, are really widely different in many essential respects. We regard it a decided disadvantage to have the offices combined.

We confidently look for your acquiescence without a resort to legal proceedings. Awaiting your early reply, we remain, etc., etc.

The Riley County Board of Health elected a Health Officer, who, however, soon afterward declined to serve. It is expected that a successor will be elected at the next meeting of the board.\*

Promises of the early appointment of Health Officers have been made as to Kearny, Norton, Neosho and Rice counties.\*

The counties of Allen, Barton, Clark, Dickinson, Doniphan, Douglas, Edwards, Elk, Gove, Grant, Gray, Harper, Jefferson, Jackson, Leavenworth, Morris, Republic, Sumner, Seward and Trego have thus far made no reply to our communication.

Hamilton county's Health Officer has failed to report for the last quarter, notwithstanding our repeated requests, and it is feared that the health organization of that county has been allowed to lapse.†

Under the advice of the Attorney General of the State, the case of Leavenworth county has been presented to the Governor, in the following communication :

LETTER TO THE GOVERNOR.

TOPEKA, November 20, 1891.

DEAR SIR: It becomes my duty, on behalf, and by direction, of the State Board of Health, to invite your attention to what we must believe is a willful violation of the laws of the State by the honorable Board of County Commissioners of Leavenworth county, in that said County Commissioners have thus far failed to organize as a County Board of Health, and elect a Health Officer, as required by section 7 of the act creating a State and local Boards of Health, chapter 129, Laws of 1885.

We may state that the said County Commissioners have been many times requested by this Board to conform to the law's requirements. We enclose a copy of a communication addressed to them on the 10th of last September, and a later one, embodying certain advice from the Attorney General of the State. Previous to these, they had been addressed on this subject repeatedly, since 1885, and all to no avail. We do not remember if they have even replied to any of our communica-

\*Since appointed.

† Have since learned that the former Health Officer has removed from the county, and that his successor has not been named.

tions; but it is certain they have thus far failed to organize as a Board of Health, or to appoint a Health Officer. A recent communication from the county clerk, as to what action had been taken upon our letter of October 31, states that "No action was taken, only to lay the matter over." From long experience with this Board, we conclude that, unless overtaken by the strong arm of the law, the matter will be "laid over" indefinitely, so far as they are concerned. In our judgment, there is no possibility of a compliance with the law on their part, except upon compulsion. Therefore, we reluctantly but earnestly request your excellency to interfere in our behalf, and in support of the law, thus set at naught.

The deliberate, long-continued opposition, or refusal of coöperation of Leavenworth, \*Wyandotte, Douglas and a few other counties, representing the bulk of our population, and, strangely enough, in great part, also, the wealth, intelligence and culture of the State, has done more to retard the progress of public health interests among us than any other single cause within our knowledge.

The State Board of Health has thus far labored patiently and hopefully to accomplish the purposes for which it was created, through the education of the people as to the utility of those purposes, being loth to appeal to the law for the enforcement of measures so obviously ordained for the public welfare; until it has now reached a point when further proceedings on its part, without a full and fair compliance with the law on the part of all concerned, would be a scandal and a reproach to the grand cause of public health, as well as a great injustice to those other counties of the State, and by far the larger number, which have labored with us faithfully from the beginning.

Leavenworth county was especially designated because of its importance, and from the fact that it had never attempted to comply with the law. The other delinquent counties are scarcely less culpable, and should be proceeded against without delay. To defer doing so, would in our judgment greatly impair the utility of the Board.

To this communication, the Governor replied as follows:

TOPEKA, December 1, 1891.

*Dr. M. O'Brien, Secretary State Board of Health, Topeka:*

DEAR SIR— . . . The matter of the neglect or failure of the Leavenworth County Commissioners, to which my attention was called in your recent communication, I have referred to the Attorney General, and, also, had a personal interview with him on the subject. He will accordingly communicate with the Commissioners of that county in a way which I trust will bring about the desired results.

(Signed) LYMAN U. HUMPHREY.

Later, receiving only a limited response to our communication of the 31st of October to the delinquent County Commissioners, we again addressed the Governor upon the subject, in a communication, as follows:

#### SECOND LETTER TO THE GOVERNOR.

TOPEKA, December 22, 1891.

DEAR SIR: Under the advice of the Attorney General of the State, as given in the inclosed printed communication, we have the honor to bring to your notice the fact that, in violation of existing law, the following counties are at the present time without a health organization, viz: Allen, Barton, Clark, Dickinson, Doniphan, Douglas, \*Edwards, Elk, Gove, Gray, Grant, \*Harper, Jackson, Jefferson, Morris, \*Republic, Seward, Sumner, and Trego†.

The County Commissioners of these counties have been repeatedly requested and

\* Since organized. † The counties of Hamilton and Linn have since been added to this list.

urged by this Board to organize their County Health Boards, as required by law, until we are satisfied that further effort on our part would be useless. Their delinquency has seriously crippled the public health interests of the State, and, if persisted in, unpunished, must result in the final disintegration of the whole system.

We therefore respectfully request that they be proceeded against without delay, according to the plan recommended by the Attorney General.

It is proper to add that the counties of \*Kearny, Leavenworth, \*Neosho, \*Norton, \*Rice and \*Riley are likewise without health organizations, in violation of law. Of these, you already have the case of Leavenworth county before you, and the others have promised to organize at an early day. For these reasons the counties last named have not been included in the list of delinquent counties.

To this communication we have received the following:

TOPEKA, December 28, 1891.

*Dr. M. O'Brien, Secretary State Board of Health, Topeka*—DEAR SIR: In reply to your communication of the 22d inst., I have directed the Attorney General to write the county attorneys of those counties where the law requiring an establishment of County Boards of Health has been ignored, advising them to notify their respective boards of their duty under the law.

If then, they persistently refuse compliance, I have directed the Attorney General to institute proceedings to enforce a compliance.

(Signed) LYMAN U. HUMPHREY.

The question must rest here for the present, but the Governor's communication speaks with no uncertain sound, and I feel confident of the final result.

But that some legal interference will eventually be required to bring at least, one of the delinquent counties into line, will appear from a reading of the following communication:

“—— COUNTY, KANSAS, —— 189—  
“two the board of helth offiscer of the Stait of Kan.

“threw request of docter —— of ——, I wish to write and Stait that the board of county cometioners have concluded mot to hier a county helth oficer as it Seems to bee the publick centiment of the peopel of this county that it is a waist of public funds to pay a phyfession to look of the helth of this county and it seems to bee an imposibility to get the docters of this county to make a report of the berth and dethe of the county and aS an impariel report is aquivelent to now report a tall the county cometioners have decided to retain the services of docter —— as a Kind of a figuer head in case of an epodemic to act as help oficer and mke Such reports as seems best and the board a Grees to pay him acording to his work.

respectively yours

——, Chairmen of the board of County cometioners.”

This communication is not introduced to illustrate the humor of the situation, although the situation does, at long intervals, take on a humorous aspect; nor is it introduced primarily to disclose the insufficiencies of the “Chairmen of the board of County cometioners.” To write and read come by nature, and have been called a vanity. We desire only to call attention to the degree of obliquity against which Health Boards must make head, even in enlightened Kansas.

\* Since organized.

Our efforts to promote the establishment of municipal Boards of Health have been productive of some good in that direction. A few boards have already been appointed as the direct result of our efforts, and the subject has been brought prominently before the people of the leading cities of the State.

At present, municipal boards are in existence as follows: Topeka, Leaworth, Wichita, Hutchinson, Fredonia, Emporia, El Dorado, Junction City, Fort Scott, Clay Center, Parsons, Oswego, Pittsburg, Burr Oak, Garden City, Washington, and Yates Center. The majority of these have been in operation for a considerable time.

Doubtless there are other cities which have Boards of Health, but, through some strange perversity, no direct knowledge can be obtained on the subject. The officers of such boards are doubtless oblivious or regardless of the law's requirements in this respect, and thus it is that, at every step, a resort to legal proceedings seems inevitable.

We are hopeful of securing the establishment of a Board of Health for Kansas City as soon as the various conflicting elements can be harmonized. There is room, here especially, for an able, aggressive health organization. We have similar hopes as to Salina and other cities.

Some dissatisfaction has been expressed as to the rule of this Board, founded on the opinion of the Attorney General of the State, requiring municipal boards to report through the County Health Officers, instead of directly to this office. While either course would be equally agreeable to us, I do not see how the Attorney General's opinion can be overcome.

In many respects, it is preferable that municipal boards should exclusively deal with health matters within their jurisdiction, including the collection of vital statistics, having, in a word, the same scope of operations as are prescribed for the County Boards. The enactment of ordinances to this end would effectively supply the deficiencies of the State law. But such boards, as at present constituted, have the most varied and complex purposes. Very few pay any attention to collecting statistics, thus compelling the County Health Officer to invade their territories for reports upon this head. They are generally charged with the control and management of contagious and infectious diseases as their chief work, and require their physicians to report only such cases, leaving the births and deaths to be collected by the County Health Officer, if collected at all. This dual responsibility is burdensome to the physician.

Our aim should be to bring about the coöperation of all municipal boards upon the same general plan, encouraging them to establish exclusive control over all the interests of public health within their jurisdictions. This done, and the interests of the smaller cities, towns, villages and rural populations committed to efficient County Health Officers, we can justly claim that the public health interests of the people are supervised and protected.

A considerable portion of the labors of the quarter have been devoted to



bringing about a more general compliance with the health laws of the State on the part of the physicians. It is already well known to you that the reports of many of the County Health Officers have become so meager as to be almost valueless. The general excuse was, that the physicians would not report. Not a few of the Health Officers had been forced, from lack of data, to content themselves with a bare general statement at the end of the year, accompanied, it might be, by some few disconnected scraps of vital statistics. The Health Officers themselves had, in many instances, partaken of the general indifference. It was to arouse and renew an interest in health work that our circular letter to Health Officers, given in our previous report, was intended. I am now able to state that, for the most part, the responses thus far received have been encouraging. The degree of fraternal spirit manifested by physicians generally is reassuring. Our method of procedure has been to send to each County Health Officer a sufficient number of copies of our circular letter, and of the notices for his signature, to reach every physician and accoucheur in his county. It was thought that a copy of the Board's circular would relieve the Health Officer of the burden of responsibility, should legal proceedings become necessary.

It was left to the County Health Officers themselves to appoint the time beyond which a failure on the part of a physician or accoucheur to report would be considered good ground for prosecution, and as many of them have considerably named the beginning of the next year, or as late as November 1 and December 1 of this year, it is obvious that our reports for this year can scarcely show marked improvement.

Doctor Swigart, Health Officer of Mitchell county, says:

"The Board will stand by me, and I think a full report can be had without legal recourse. Altogether, I am very much encouraged."

Doctor Loose, Health Officer of Marion county, says:

"I have a few letters from physicians, saying that they will abide by the law as long as they live."

The Doctor expresses the fervent hope that they may live long, and in this beneficent wish we heartily concur.

Doctor Rouze, Health Officer of McPherson county, says:

"Quite an interest has been awakened in the new departure. Returns are quicker. I think we shall have no trouble in this county. Am in full sympathy with your Board in its efforts to improve the vital statistics and sanitary records of the State, and will do all I can to bring my county to a place in the front rank."

Doctor McKinley, Health Officer of Johnson county, writes:

"I consulted the Commissioners, and had them read the law. They instructed me to go ahead, and they would stand by me. I expect a greater harvest next month."

Doctor Peak, Health Officer of Pratt county, writes that he thinks it a good move.

Doctor Wallace, Health Officer of Phillips county, says:

"Am ready to assist in any way possible to bring about satisfactory issues and results."

Doctor McKinney, Health Officer of Reno county, writes:

"Our County Commissioners are interested, and are willing to do all in their power to support the law and carry out its intent. They said they would indorse all my actions."

Doctor Goodwin, Health Officer of Rush county, writes:

"Our board is favorable to all the provisions of the law. Anything I can do to make it effective, I am ready to do."

Doctor Bower, Health Officer of Smith county, writes:

"A number of the delinquents have promptly responded. I have consulted the county attorney, and together we are laboring with them. I think in a short time we will receive reports regularly."

Doctor Burwell, Health Officer of Sherman county, writes:

"The county attorney says he will enforce any order you give regarding health laws."

Doctor Pratt, Health Officer of Brown county, writes:

"The Board of County Commissioners are staunch backers of mine. Since sending the notices, have had responses from several, calling for blanks. I am hoping there will be reports from most of the physicians without further trouble."

Doctor Reynolds, Health Officer of Clay county, says:

"I anticipate that our physicians will report without delay."

Doctor Hait, Health Officer of Chase county, writes:

"Some responses already. I think it will be all right hereafter."

Doctor Halliday, Health Officer of Comanche county, writes:

"I think, under your new procedure, reports will become more perfect. I will report in full in December, and it will be perfect."

Doctor Watson, Health Officer of Greenwood county, says:

"The law will be enforced in full."

Doctor Brewer, Health Officer of Ottawa county, writes:

"I will distribute the letters at once and carry out the instructions, doing all in my power to enforce the law."

Doctor Hall, Health Officer of Lincoln county, writes:

"There is being quite a call for reports."

Doctor Rownd, Health Officer of Lane county, says:

"I think the county attorney will be with me in the matter."

Doctor Biddle, Health Officer of Lyon county, writes:

"Will comply with your orders to the best of my ability."

Doctor Manson, Health Officer of Coffey county, writes:

"I deferred taking action until a meeting of the County Commissioners. They have instructed me to give notice to physicians, and comply with your requests as far as possible. Will try to make the work effective."

Doctor Strother, Health Officer of Labette county, writes:

"There is being quite a call for reports. I have shown your letter to the county

attorney, who assures me that, whenever I present a case to him with sufficient evidence to support it, he will prosecute the same without fear or favor."

Doctor Humfreville, Health Officer of Marshall county, writes:

"I believe, by keeping at them, we will be eminently successful."

The foregoing illustrate the general tenor of the replies thus far received. They are for the most part, to be sure, from Health Officers who have all along supported the Board with loyalty and good will.

If we are not entirely misled by these responses, much good to the cause of public health must follow. However, we shall not be disappointed if the result fails to justify the full measure of our hopes. Until a very considerable change shall have been made in the personnel of the County Boards of Health, as at present constituted, it is not to be expected that the Health Officer will, in every instance, proceed against his professional brethren. The fearless execution of his duties, in a fair and impartial manner, is but the ideal of our hopes. We apprehend that, when the question of prosecution is presented as the last resort, many will flinch from the test. Already, we have signs of this. One Health Officer advises us that he will resign the office before he will go to law with his fellow-physicians. Another, that he does not care to go into any litigation unless necessary, because he cannot afford to spend time, and gain the enmity of neighboring physicians, for the very small compensation he receives from the office; that he would resign rather than "stir up any racket," etc.

This brings us to an examination of the manner in which County Health Officers are at present elected. There is assuredly something radically wrong in this respect. The law provides that preference shall be given to adepts in sanitary science. This provision, if adhered to, should secure the election to the position of, at least, a first-class medical man. But the practice is, and evidently has been, to make the selection upon totally different grounds; and, unfortunately, there seems to be the closest competition upon the part of the aspirants for the office. In instances the position has been given to the lowest bidder or combined with the office of county physician, or a bargain made for limited service, as during epidemics, etc., until the true standard of requirements, both as to duties and qualifications, has been considerably departed from. There are a number of Health Officers who serve their counties gratis; there is a still greater number who serve for a mere pittance; while in scarcely a single case is there given anything like the adequate compensation of a competent official.

This Board has interested itself, as far as it can with propriety, in procuring a more adequate compensation for Health Officers. The subject is left wholly within the discretion of the County Board of Health; but, by informing those boards more thoroughly of the exacting nature of the Health Officer's duties, and by stimulating physicians to decline the office unless reasonably well paid for their services, through assuring them that they will be held to a thorough performance of the duties of the office regardless of

compensation, we hope to accomplish something in this respect. There can be little hope of marked improvement except through the physicians themselves. So long as the County Boards are overwhelmed by the candidacy of men who are chiefly desirous of the advertisement which the position affords, the question of salary or compensation will not become prominent.

It is doubtless the fact that good, well-meaning and honorable physicians, acting in ignorance of the duties and responsibilities of the office, have accepted the position without reference to the salary attached; but the chief obstacle is found in that seemingly inexhaustible number which seek the office for selfish purposes.

Once in position, learning that there is really something to do, involving considerable time and trouble, the question of compensation is brought into prominence. One writes: "The Health Officer of this county is paid but — dollars a year to look after its work, and for this sum you cannot expect me," etc., etc. Another: "My salary has been reduced to — dollars this year, and you cannot expect much of me," etc., etc. The duties are neglected from the first. Little or no attention is given to public health matters outside of making some little pretense about the county-seat, and little or no communication can be had with the Health Officer in such cases. He becomes a burden rather than a co-laborer, and is a positive hindrance to progress in health work. His always incomplete and generally valueless reports are at once an encouragement and a discouragement: an encouragement to the lazy and indifferent class which he represents, and a discouragement to the zealous and faithful official whose labors he serves to discredit. But he will never resign, and invariably has much to say of the inadequacy of the health laws, and of the failure of physicians and others to report to him. It is scarcely a wonder that physicians are not eager to report their business to such an official.

The unpleasantness of dealing with this class was well illustrated recently in our efforts to procure their annual reports. Request after request was made—as many as five or six, in instances—without receiving a response. And when the response came it was not infrequently a feeble admission of being unable to furnish any reports whatever. The requests for annual reports were made about the 20th of December last, and at this date, February 15th, there remain five County Boards unheard from in any manner, while a larger number have furnished only incomplete reports.

There exists a legal remedy for this state of things, to be sure. The law requiring Health Officers to submit their reports is as firmly established as any contained in the statutes, but, as the penalty for failure is small, it is not improbable that they would welcome a prosecution as a means of notoriety.

It is not denied that the duties of County Health Officer are onerous to a marked degree, under the most favorable circumstances. They are especially so where there exists no public sentiment in support of sanitary meas-

ures. It is not a question of law solely, nor even chiefly. No matter what degree of power is given the Health Officer, he can make but little progress against the apathy or indifference of the public upon the work in which he is engaged. No law was ever yet devised which would render such coöperation unnecessary.

The delinquency of physicians in making reports is constantly complained of. All manner of excuses are offered for this delinquency. It is stoutly contended by physicians of considerable legal pretensions, that the law requiring them to report is unconstitutional, inasmuch as it seeks to take the property of the citizen (his time and labor,) without due compensation therefor. This fundamental declaration has induced many well-meaning physicians to withhold reports of any kind.

Another objection to making reports is graphically presented in the following communication :

“ ———, KAS., October 18, 1891.

“Dr. ———, County Health Officer:

“SIR—Making reports every 30 days will take postage stamps, etc. Who will pay them? I have paid them so far; think the board should make provision for that.

Respectfully, etc.,

DR. ———.”

As to this objection, it may be answered, that requiring a physician to prepay his returns is of a piece with the requirement compelling them to be made; it is a part of the act. The law requires that the returns or reports shall be made to the local Board of Health, at the time and in the manner prescribed by the State Board of Health. It can be said of this, as was said of the provision requiring Health Officers to report, that it rests as securely as any law in our books. It is only required that it shall be enforced, and herein lies the whole difficulty. Until County Health Officers shall have used all reasonable means to procure reports from physicians, to the extent of exhausting the power of the law, no excuse should be accepted. The law does not presume the performance of impossibilities; but every person who accepts a public office agrees, under oath, to perform all the duties of the office, whatever they may be, and the presumption of law is, that he takes the office with all the duties that are or may be attached to it.

As to the power of the State in the matter of requiring returns and reports from physicians and Health Officers, we would invite attention to the following extract from the decision of our Supreme Court in the case of *The State v. Creditor*, (44 Kas., p. 565.) This case was brought to test the validity of the law requiring applicants for permission to practice dentistry in the State to undergo an examination as to fitness, etc., it being contended that the said provision was repugnant to the United States constitutional provision which forbids a State from making any law which shall abridge the privileges or immunities of citizens of the United States. The principle involved in this masterly decision applies with equal force to the complaint of physicians that they cannot be compelled to give their time, etc., in the preparation and delivery of such reports without due compensation therefor.

## THE OPINION OF THE COURT.

"The power of the Legislature to regulate the practice of medicine, dentistry, or surgery, is undoubted; it is an exercise of the police power of the State for the protection of the health and the promotion of the comfort and welfare of the people. It may provide that only those possessing skill and learned in these professions shall be permitted to practice; may prescribe the nature and extent of the qualifications required, and the rules for ascertaining and determining whether those proposing to practice come up to the statutory standard. If the regulations and conditions are adopted in good faith, and they operate equally upon all who may desire to practice, and who possess the required qualifications, and if they are adapted to the legislative purpose of promoting the health and welfare of the people by excluding from the practice those who are ignorant and incapable, then the fact that the conditions may be rigorous, impolitic and unjust will not render the legislation invalid."

The following table shows the present compensation of Health Officers, as far as reported to this office:

*No compensation.*—Ellis, Marion, Smith and Stanton counties.

*Not stated.*—Chautauqua, Cherokee, Coffey, Edwards, Franklin, Ford, Harper, Hodgeman, Haskell, Kingman, Pottawatomie, Riley, Stafford, Wyandotte and Wallace counties.

*Expenses only.*—Mitchell county.

*\$3 per day, actual service.*—Kiowa, Lane, Marshall, Osage and Rush counties.

*\$10 per annum.*—Comanche and Ness counties.

*\$20 per annum.*—Cheyenne county.

*\$25 per annum.*—Barber, Greeley and Meade counties.

*\$30 per annum.*—Nemaha county.

*\$34 per annum.*—Reno county.

*\$36 per annum.*—Clay county.

*\$40 per annum.*—Brown, Logan and Wichita counties.

*\$45 per annum.*—Rooks county.

*\$48 per annum.*—Pratt county.

*\$50 per annum.*—Anderson, Chase, Greenwood, Graham, Harvey, Kearny, Pawnee, Rice, Stevens, Wabaunsee and Woodson counties.

*\$57 per annum.*—Neosho county.

*\$60 per annum.*—Johnson, Miami, Morton and Rawlins counties.

*\$75 per annum.*—Atchison, Bourbon, Shawnee and Saline counties.

*\$80 per annum.*—Cloud and Sheridan counties.

*\$100 per annum.*—Butler, Cowley, Crawford, Garfield, Geary, Jewell, Lyon, Labette, Norton, Phillips, Republic, Russell, Sedgwick, Thomas, Wilson and Washington counties.

*\$150 per annum.*—Decatur and Sherman counties.

*\$200 per annum.*—Lincoln, McPherson and Montgomery counties.

*\$266.66 per annum.*—Ottawa county.

*\$500 per annum.*—Scott county.

*Finney county* pays its Health Officer 25 cents for recording each birth, death and marriage reported to him, in lieu of all compensation.

*Osborne county* pays its Health Officer 25 cents each for recording each birth, death and marriage reported to him; \$5 for a sanitary inspection, removal of nuisance, and quarantining each case of contagious disease in the city, and \$10 for the same service in the country, in lieu of all compensation.

*Cowley county* allows its Health Officer a fee for extra service, in addition to his annual salary.

*Crawford county* allows its Health Officer 10 cents for recording each birth and death, in addition to annual compensation.

*Ellsworth county*.—25 cents for each report of death, birth and marriage transcribed in record book of vital statistics; 15 cents for each such report embodied in annual report to State Board of Health, and mileage when called to visit cases of infectious disease in official capacity in lieu of all compensation.

*Lane county* allows its Health Officer 25 cents each for filing, and five cents each for recording, birth, death and marriage certificates reported to him, in addition to other compensation.

*Lincoln county's* Health Officer is also the county physician, and furnishes the medicine required by paupers of the county for the sum named.

The Health Officers of Decatur, McPherson, Montgomery, Ottawa and others, receiving more than \$100 per annum, I judge are also the county physicians of their respective counties, for the sum named.

The Health Officer of Scott county is fortunate in being the only physician in his county. Doubtless he also performs the duties of Health Officer and county physician for the sum named.

It is believed that if physicians would pursue a dignified, self-respecting course, the position of County Health Officer would speedily become reasonably important both in dignity and compensation. But little improvement can be expected, except through these means. Physicians will enter into a close, and oftentimes bitter, competition for the office, only to find themselves in a false position, if successful.

We have dwelt upon this subject because, to our mind, in the character, ability, and fidelity of the County Health Officers, rest the hope of this Board and the hope of substantial progress in effective health work. Fortunately, we have every assurance of word and deed that the greater number of the present County Health Officers are in hearty accord and sympathy with every effort to promote the efficiency of the health service of the State.

It should not be inferred from anything heretofore stated that the amount of the compensation sustains any relation to the efficiency or inefficiency of the health service of the county. Many of our most zealous and able co-laborers receive only a nominal recompense for their labors. But it is hoped they will not long continue to serve without something like an adequate reward.

It is gratifying to report, with it all, that general good health is maintained throughout the State.

Health Officers are required to report quarterly as to the prevalence of small-pox, measles, whooping-cough, scarlatina, diphtheria, dysentery, typhoid fever, pernicious malarial fever, cholera and cholera infantum, in their respective counties.

I have reports, more or less complete, from 68 counties, as follows: Anderson, Butler, Brown, Bourbon, Cowley, Crawford, Coffey, Chase, Comanche, Cloud, Clay, Decatur, Ellis, Ellsworth, Ford, Finney, Greeley, Garfield, Greenwood, Geary, Graham, Hodgeman, Harvey, Jewell, Johnson, Kingman, Lane, Lincoln, Labette, Linn, Logan, Lyon, Mitchell, Montgomery,

Marshall, Meade, Miami, Marion, McPherson, Ness, Nemaha, Ottawa, Osborne, Osage, Pottawatomie, Pawnee, Pratt, Phillips, Rooks, Rawlins, Russell, Rush, Reno, Stanton, Saline, Scott, Sedgwick, Sheridan, Smith, Shawnee, Sherman, Stevens, Thomas, Wabaunsee, Wilson, Wichita, Woodson, and Wallace, all testifying to the comparative good health of the people, and the freedom from epidemic and contagious diseases.

It is true, the diseases reported upon, (one or more of them,) have been observed in nearly every county named, but chiefly in a sporadic form, easily controlled. There have been no serious outbreaks. To the skillful attention of the County Health Officers, and of physicians generally, in the management of these diseases, must be accorded the praise. In scarcely an instance has there been a failure to check the disease promptly, often confining it to the first case.

Typhoid fever is reported from Decatur, Garfield, Scott and Stevens counties.

Typhoid fever and diphtheria are reported from the counties of Brown, Bourbon, Ellsworth, Jewell, Kingman, Lyon, Mitchell, Sedgwick, and Thomas.

Typhoid fever and dysentery from Finney, Lincoln, Labette, Marshall, Meade, Miami, Marion, Ottawa, Pawnee, Pratt, Saline, Sheridan and Sherman counties.

Typhoid fever and cholera infantum from Greenwood, McPherson and Woodson counties.

Diphtheria and whooping-cough from Rush county.

Diphtheria and dysentery from Smith county.

Malarial fever from Lyon county.

Malarial fever and cholera infantum from Coffey, Logan and Russell counties.

Pernicious malarial fever from Geary, Lane, Lincoln, Lyon, Pawnee, Pratt, Stevens and Stanton counties.

Pernicious malarial fever and dysentery from Nemaha county.

Measles and cholera infantum from Finney, Jewell, Marion, Pottawatomie and Sedgwick counties.

Cholera infantum from Comanche, Ellsworth, Johnson, Labette, Montgomery, Mitchell, Meade, Ottawa, Rooks, Reno and Sheridan counties.

Cholera infantum and whooping-cough from Harvey, Marshall and Sherman counties.

Dysentery from Harvey, Montgomery, Mitchell, Osborne, Pottawatomie, Russell and Thomas counties.

Dysentery and scarlatina from Jewell, Lyon and Sedgwick counties.

Whooping-cough from Finney, Marion and Wilson counties.

Measles from Phillips and Smith counties.

Scarlatina from Marion, Rush, Saline and Wilson counties.

The aggregate number of cases of these diseases reported is 927, arising



as follows: Cholera infantum, 23; dysentery, 206; diphtheria, 131; typhoid fever, 115; whooping-cough, 111; scarlatina, 76; measles, 38; pernicious malarial fever, 19.

The counties of Ottawa, Lyon, Sedgwick, Jewell, Greeley, Bourbon, Mitchell, Marion, Pratt, Nemaha, Sheridan, Logan, Harvey, Pawnee and Lincoln have contributed the greater number of these cases, in the order named.

The total number of deaths from the causes named is 154, arising as follows: Cholera infantum, 68; diphtheria, 34; typhoid fever, 25; dysentery, 16; pernicious malarial fever, 7; scarlatina, 4.

The counties of Sedgwick, Marshall, Pratt, Jewell, Marion, Bourbon, Ellsworth, Lincoln and Lyon have contributed the greater number of these deaths, in the order named.

It is not pretended that the foregoing statistics are complete for even the counties named; it is only an approximation, but they may serve as an indication of the true condition.

The counties of Anderson, Butler, Cowley, Chase, Cloud, Ellis, Hodge-man, Linn, Ness, Osage, Rawlins and Wichita make no report of the presence of any of the diseases named.

Dr. R. Aikman, Health Officer of Bourbon county, writes:

"This has been an unusually healthy summer, almost free from malarial and other diseases which usually prevail."

Dr. L. D. Hall, Health Officer of Cloud county, writes:

"No diseases dangerous to the public health have prevailed in this portion of the State during the past quarter. The general sanitary condition is not as good as it should be, but is, perhaps, as good as the average. There have been quite a number of nuisances complained of, but all have been removed on our orders except one, in which we were compelled to have the party arrested and brought before the court. The case was finally disposed of without trial, our orders having been complied with."

Dr. W. B. Mead, Health Officer of Decatur county, writes:

"While we have had a very wet season, it has been a very healthy one. Northwest Kansas, and this county in particular, is attracting the attention of prominent Eastern physicians as a health resort, which it surely is, and must soon receive national recognition as such. I shall, later on, attempt to set forth my reasons for this belief. We have seemed to be out of the way to health-seekers, and our claims have been construed by many as an effort to boom the county into notice for commercial purposes."

Dr. H. B. Kohl, Health Officer of Ellis county, writes:

"The county is in a remarkably healthy condition. Complaint was made to me in August, by citizens of Catharine township, that stable manure had been dumped into the north fork of Big Creek, to make a crossing. I recommended that a bridge be built over the creek, and the work is now in progress."

Dr. H. O'Donnell, Health Officer of Ellsworth county, writes:

"Diphtheria has appeared at intervals, during the past six months, at Holyrood and Wilson, in this county. A case was imported into the former place from St.

Louis, about last April, and from that case the disease has spread. I have thoroughly isolated and disinfected the premises by sulphur and chlorine fumigations. Unfortunately, the people are poor Bohemians, who did not understand how, or were unwilling to cooperate. The vegetation has been very rank. Have had the weeds cut down in the cities. There has been less malarial trouble than I anticipated earlier in the quarter."

Dr. F. W. Watson, Health Officer of Greenwood county, writes:

"The sanitary condition is good. Less sickness and fewer deaths than I have ever known."

Dr. Walter Crew, Health Officer of Jewell county, has submitted a special report of diphtheria in that county, which is hereto appended.

Dr. J. A. Norris, Health Officer of Logan county, writes:

"Fever, of a typho-malarial type, has prevailed to a considerable extent during the summer and autumn. We called it mountain fever. Bowel complications very marked, like typhoid, with ulcerations and hemorrhage."

Dr. T. C. Biddle, Health Officer of Lyon county, writes:

"The location of Lyon county is remarkably favorable to good health. The natural drainage is exceptionally good. We have no system of sewerage in Emporia. Open sewer ditches run through the city, and are a constant source of danger. Seventy-five complaints of nuisances have been made to the city board, and 50 abated."

Dr. J. E. Rouze, Health Officer of McPherson county, writes:

"Our county, owing to its natural advantages, is exceptionally healthy. There is not a city, village or community that may be said to be unsanitary in its environments."

Dr. J. F. Brewer, Health Officer of Ottawa county, writes:

"There has been considerable of typhoid fever in a single section of the county. This is on the slope north of the Saline river, and is a locality often visited by the disease. Many died there two years ago from dysentery."

Dr. J. W. Robb, Health Officer of Russell county, writes:

"We have, at this season of the year, more or less remittent fever, worse always in dry weather, sometimes assuming a typhoid character, the cause of which we have failed to discover. There is, at this time, on account of the wet weather, a greater tendency than I have ever known to intermittent fever, which, however, has not yet developed to any considerable extent. Have not had a case of small-pox in 12 years and very few cases of diphtheria or typhoid fever. We have, every year or two, a few cases of scarlet fever in the city of Russell, which I think is imported."

Dr. A. W. McKinney, Health Officer of Reno county, writes:

"No epidemic of any kind, and no particular disease has prevailed in any portion of the county. Has been the healthiest hot season known in the county. I regard the sanitary condition as fine. The soil is porous, surface undulating, water from open and drive wells, hard, and much freer from contamination than is to be found in counties with timber and clayey soils. The City Board of Health has done its duty; has been sustained by city authorities and obeyed by the people."

Dr. C. A. Culver, Health Officer of Stanton county, writes:

"I believe our county to be one of the healthiest in the State. It is high and dry;

soil good, light, and porous, just in condition to absorb the moisture we get and hold it, and there is nearly always wind enough to purify the atmosphere. The wells in the central and western parts of the county are 150 to 200 feet deep; in the eastern part, 40 to 80 feet."

Dr. P. D. St. John, Health Officer of Sedgwick county, has submitted a report upon the outbreak of diphtheria in the city of Wichita, which is hereto appended.

Dr. I. A. Winternitz, Health Officer of Sheridan county, submits a report of scarlatina in the city of Hoxie, which is hereto appended.

Dr. W. M. Edwards, Health Officer of Thomas county, writes:

"This county is a high, arid section, some 2,500 feet above the Missouri river; health very good. We have never been visited with small-pox. A few cases of diphtheria in the northern part of the county. The first case occurred in premises adjoining which was a cellar full of rotten potatoes."

Dr. A. W. Cormack, Health Officer of Wilson county, submits a report of the outbreak of scarlet fever in the city of Fredonia, which is hereto appended.

Certain questions, propounded to the several County Health Officers during the past quarter, have been answered as follows:

(1) *In what season of the year are infectious or contagious diseases more prevalent?*

In the springtime in Logan, Marion and Smith counties; in the late winter and early spring, in Butler county; in the winter and early spring, in Harvey county; in the winter and spring, in Linn and Osborne counties; in the fall and spring, in Cloud, Rush, Stanton and Stevens counties; in the fall and winter, in McPherson, Marshall, Sherman and Wabaunsee counties; in the summer and fall, in Garfield, Labette, Osage, Pratt, and Sedgwick counties; in the summer, in Bourbon county; in the fall, in Cowley, Nemaha, Pawnee and Scott counties; in the winter, in Decatur, Greenwood and Geary counties; in the dry season, in Rawlins county; and in no particular season, in Kingman, Montgomery, Meade, Phillips, Reno and Shawnee counties. Twenty-two Health Officers failed to reply to the question.

(2) *Have you observed any marked changes in the frequency, character and duration of such diseases?*

The reply to this question from 34 counties was, that no such changes had been observed. The Health Officer of Garfield county thinks such diseases have grown milder since 1886-7, and it has been observed in Kingman county that attacks of such diseases are less frequent than formerly. No replies from 24 counties.

(3) *Have you observed any marked changes in the prevailing diseases of your county?*

From 30 counties the reply is made that no such changes had been observed. In Clay and Lyon counties, there has been less malarial fever in the past year than formerly; in Kingman county, typhoid fever has abated; in

Lane county, nervous symptoms have become more prominent; in Logan county, the decline of malarial fever during the past six years is quite marked; not one-half as many cases as were observed 10 years ago; in Labette county, malarial fever was more difficult to control; in Linn county, malarial fever has given way to typhoid fever; in Marshall county, influenza more prevalent; in Pawnee county, less typhoid and typho-malarial fevers, while in Stanton county a greater tendency to malarial fever has been observed; in Stevens county, typho-malarial fevers have become milder in type; in Wabaunsee county, throat affections have been marked, followed by paralysis of the throat. No replies from 22 counties.

(4) *Are there any places in your county which small-pox, diphtheria, scarlet fever, typhoid fever, or any other disease, appear to frequent? If so, give name of place and disease.*

Twenty-nine counties replied that there were no such places. In Decatur county, typhoid fever, in southwestern part of county; in Ellsworth county, at Holyrood and Wilson, diphtheria; in Geary county, at Junction City, disease not given; in Kingman county, at Kingman, disease not given; in Lincoln county, typhoid fever prevails along the Saline river; in Labette county, at Parsons, disease not given; in Marshall county, at Frankfort, disease not given; in Marion county, at Peabody and Marion, disease not given; in Ottawa county, at Tescot, typhoid fever; in Pawnee county, at Larned, disease not given; in Scott county, at Scott City, typhoid fever; in Smith county, at Kensington, diphtheria; in Shawnee county, colored districts of North Topeka, disease not given; in Stevens county, at Hugoton, typhoid fever; in Thomas county, in northern part, diphtheria; in Wilson county, at Fredonia, scarlet fever; and in Wabaunsee county, at Alta Vista, diphtheria. No replies from 14 counties.

The cause in Frankfort, Marshall county, is ascribed to defective drainage; in Peabody and Marion, Marion county, to impure water; in Larned, Pawnee county, to the quality of the well water; in Topeka, Shawnee county, to uncleanness and impure water. The cause in the case of Tescot, Ottawa county, could not be located, the infected locality extending over several square miles.

Public water supplies are furnished to the following-named places: Arkansas City, Axtell, Beloit, Blue Rapids, Burden, Bunker Hill, Clay Center, Concordia, Downs, Dexter, Emporia, Ellsworth, El Dorado, Fort Scott, Fredonia, Florence, Girard, Garden City, Hutchinson, Hiawatha, Independence, Junction City, Kingman, Lebanon, Larned, McPherson, Marysville, Minneapolis, Marion, Newton, Olathe, Oberlin, Oswego, Osborne, Peabody, Pratt, Phillipsburg, Pittsburg, Paola, Parsons, Pleasanton, Salina, Smith Center, Stockton, Topeka, Udall, Winfield, and Wichita.

The quality of such supplies is pronounced "poor" or "alkaline" in Concordia, El Dorado, and Hiawatha. In all other instances it is pronounced "fair," "good," or the question has not been answered.

In Concordia, the Health Officer states: "The water has been pronounced unfit for culinary use by the State chemist, except it is first boiled; however, the citizens have waived the decision of the chemist, and are using it hot and cold."

(5) *What is the quality of the well water?*

In 36 counties it is pronounced "excellent," "fair," "good," or "generally good." In Wichita county it is called the "finest in the land." In Crawford, Chase, Labette, Linn, Mitchell, Montgomery, Marshall, Phillips, Pawnee, Rooks, Rawlins and Wilson counties, the quality is pronounced "poor," "brackish," "alkaline," "hard," etc., but in no case is it pronounced unfit for use.

A limited supply is reported from Brown county. In Ottawa county, the wells are about 80 feet in depth; in Stanton and Thomas counties, 150 to 200 feet; while in Russell county, water cannot be reached by drilling.

In Garfield county, the water from the deep wells is generally good. In Montgomery county, the wells have all failed. No replies from 15 counties.

(6) *What disposition is made of dead animals?*

In 36 counties they are buried. In Ness county, they are burned. In four counties they are burned or buried. In Garfield, Lane, Lincoln, Logan, Russell, Stanton and Stevens counties, they are drawn out and left on the prairies. No replies from 12 counties.

(7) *Are there any stagnant ponds in the county which emit a bad odor?*

The replies indicate the presence of a large number of ponds, natural and artificial, and of a few sluggish streams, but in only one case is a bad odor complained of.

One hundred and ten nuisances have been abated in the several counties during the quarter.

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A much-needed change has been made in the blank forms. Blank returns from physicians upon births, deaths and contagious diseases have been tabulated in 60 leaves each—35, 15 and 10 of each kind, respectively. The undertakers' return blank has also been changed, with good effect. The marriage return and a few other blanks remain to be improved.

The increasing demand from Health Officers and others for information as to the rules of the Board, the duties and powers of Boards and of Health Officers, etc., has led to a revision of the pamphlet heretofore published on these subjects, and the publication, in pamphlet form, of the rules and the duties and powers of local Boards of Health and Health Officers, separately. The health laws of the State have also been published in pamphlet form. Copies of these pamphlets have been issued to all Boards of Health within the State, so far as known.

About 500 copies of the Sixth Annual Report have been distributed throughout the State, (exclusive of 1,200 and more copies sent to the several counties,) one-half the number going to newspapers. The publications of

the Board upon typhoid fever, diphtheria, small-pox, scarlet fever, longevity, disposition of sewage, preventive medicine, etc., have been widely distributed.

Pursuant to the authority of the Board, the Secretary attended a meeting of the South Kansas Medical Society, held at Hutchinson, for the purpose of becoming acquainted with the physicians of that section of the State, and personally giving information as to the work and purposes of the Board.

Through the courtesy of General Manager Clark, of the Missouri Pacific Railway Company, and Col. H. C. Cross, President of the Missouri, Kansas & Texas Railroad Company, the Secretary of the Board has been supplied with free transportation over those lines in Kansas.

Interstate notification of the presence of contagious disease has been received, as follows: Canada, an outbreak of small-pox in the Province of Quebec; Michigan, an outbreak of small-pox at St. Joseph; Ohio, an outbreak of small-pox at Cincinnati and Glendale; Pennsylvania, an outbreak of small-pox at Morristown and Point Pleasant; Tennessee, an outbreak of small-pox at Obion.

A short sketch of the outbreak in the Province of Quebec is deemed worthy of reproduction:

"On the 8th of September last, a female servant named Bujold, employed in the family of Mr. Chabot, Richelieu street, Quebec, having felt unwell for several days, and an eruption appearing on the skin, went to the Hotel Dieu hospital for advice. The physician there, being unable to diagnose the case, ordered the girl, as a precautionary measure, to be placed in a room by herself until the following day. The girl, however, managed to leave the hospital, and, crossing over to Point Levis, took the Intercolonial cars to Dalhousie that evening, and at Dalhousie embarked on the steamer "Admiral," arriving at her home at Carleton, county of Bonaventure, at 9 o'clock A. M., September 9, where her case was afterward recognized as small-pox. The disease declared itself 10 or 12 days afterward in a house at Carleton, at which the girl had stopped for a short time on her way through the village to her father's house, after leaving the boat. These were the first cases reported to the provincial board. Later, the Provincial Board of Health of New Brunswick reported a case in Dalhousie, that of a sailor employed on the "Admiral."

"A well-qualified medical inspector was at once dispatched by the provincial board, with instructions to see that the local board was doing its duty in the matter of isolation, vaccination, and disinfection, and to return on the track of the girl Bujold, in order to discover, if possible, the source from which she had been infected.

"Cases having been reported at St. Paul de la Croix and at St. Damase, the inspector was telegraphed to call there on his way back to Quebec, these places being only a few miles distant from the Intercolonial Railway line. Both these outbreaks occurred from direct contact with the girl Bujold on the cars. The gravity of the St. Paul de la Croix outbreak is explained by the fact that the persons infected on board the cars by the girl Bujold went to a social gathering in the post-office house the night of their arrival at St. Paul. Cases resulting from contact with her on the boat were subsequently reported from Pabos, Newport, and Shoolbred, and are being well looked after by the local boards.

"The cases of spreading from parishes originally infected are: Two cases at St. Clement, a parish adjoining St. Paul; four cases at Ascot, near Sherbrooke, in a family returning home from St. Damase; and one case at La Jeune Lorette, in a

washerwoman's family, which resulted from infected clothes brought from the Cha-bot house, in Quebec, before it was quarantined.

"On the return of our inspector to Quebec, and on his going to the house in which Bujold had resided, he discovered a child with small-pox well developed, and shortly afterwards another child in the same house took the disease; both were unvaccinated, and both died. On continuing his search, our inspector found that a nurse named Gale, attached to the Jeffrey Hale hospital, had been seized with small-pox, and had been removed from the hospital to a house in Richelieu street, some two doors from the house in which Bujold afterwards fell sick. Further investigation proved that another nurse from the same hospital, named Macpherson, had been laid up with small-pox, and had been sent away from the city to a neighboring village to be treated. These two cases had not been reported, so far as the inspector could learn. It further transpired that a male employé of the hospital had shortly before died of an eruptive disease which the provincial board has strong reasons for believing was small-pox. A prior case, not yet fully investigated, appears to have been in the hospital, in the person of a sailor or a man employed about the harbor. It is possible, but not yet proven, that this case resulted from the steamer "Brazilian," which was quarantined at Grosse Isle, in June, and which, after having landed her sick and having been disinfected, proceeded to Montreal, where a case of small-pox was discovered on board. This vessel stopped at Quebec on her return trip, and some of the sailors, it is reported, went ashore and sold clothes to second-hand shops."

A case of suspected leprosy in Michigan was reported in the newspapers, but upon investigation the rumor proved to be groundless.

As an illustration of the active supervision given to public health interests in Michigan, I invite your attention to the following extract from a recent special meeting of the Board of Health of that State:

"The secretary presented letters from the mayor and others, and a numerously signed petition from citizens of Iron Mountain, setting forth that their city is suffering from a serious epidemic of typhoid fever, 436 cases and 32 deaths from typhoid fever having occurred from August 7 to October 6, 1891, and asking that the State Board hold a sanitary convention there, for the purpose of aiding the citizens in stamping out the epidemic, and stating that Iron Mountain had raised \$250 for defraying the expenses of such convention. Although petitions for conventions at Holland and Charlotte had precedence of this one, on account of the very serious situation at Iron Mountain, the board decided to accept the invitation and hold a convention there October 30 and 31.

"The board also appointed a committee to investigate an outbreak of diphtheria at Imlay City and vicinity, from which upwards of 70 cases and 14 deaths are reported to have occurred since August, 1890.

"The secretary presented a report of typhoid fever in Deerfield township, where about 26 cases and 7 deaths have been reported since August 20, 1891.

"Correspondence relative to a suspected case of leprosy in Michigan was presented, and also the reported casualties from kerosene oil during the past quarter.

"In his report of work done during the quarter, the Secretary mentioned that the office had received notice of and taken action relative to 492 outbreaks of dangerous communicable diseases during the quarter, and 1,120 letters had been written.

"Doctor Baker stated that, although the statistics show that through health measures—chiefly isolation, disinfection, and vaccination—there has been recently a reduction of at least 1,100 deaths per year in Michigan from the three diseases,

small-pox, scarlet fever, and diphtheria, there still remained 7,000 deaths per year from diseases known to be preventable through measures the knowledge of which is being spread by the State Board of Health. He thought that an increase of the same work which has contributed to cause the reduction would be the most profitable use to which the people of Michigan could put a few thousand dollars, and that a further reduction in the deaths can be made by the constant employment of more persons in health work, one or two of whom could be employed by the State to good advantage.

“Professor Vaughan spoke of one line of work which seemed to be specially needed—an inspector to visit and aid localities to stop dangerous contagious diseases. Typhoid fever and diphtheria are epidemic in places too numerous to be visited by members of this Board, who, if they go, must leave their own business to work for the public without compensation. Something is being done now, but more ought to be done than can be done by the members of the board.”

The office work during the past six months has been quite burdensome, through the carelessness or indifference of Health Officers; the same request has been repeated, in instances, several times, and then without receiving a response. There have been 700 communications received from Health Officers; 2,500 have been sent, exclusive of 700 packages of blanks, etc. This latter number does not include the books (Sixth Annual Report) sent to the several counties, as heretofore stated.

The system of interstate and interprovincial notification of contagious and infectious diseases, which has been in practical operation in the United States and Canada for several years, to the great advantage of all concerned, has now practically extended to Mexico, in so far that notification of the presence of such diseases in the federal district of that republic, at all Mexican ports, and along the frontier between the United States and Mexico, will hereafter be made, with a prospect of the early extension of the system to include all the states of Mexico.

The Republic of Mexico is making great and rapid progress in matters relating to sanitation, and closer coöperation with her must greatly enhance the public health interests of the whole continent.

The State Board of Health of Pennsylvania has forbidden the transportation of bodies of persons dying of diphtheria. This action was taken in view of the fact that, in several instances, diphtheria was known to have been propagated in that way. The same restriction is made by the boards of Ohio and Iowa. The list of diseases, thus interdicted, now includes small-pox, Asiatic cholera, typhus fever, diphtheria, and yellow fever.

The State Board of Health of Maine has interested itself in the establishment of an efficient inspection and quarantine station in connection with the Marine hospital, at Portland, in that State.

It was formerly the case that a large number of trans-Atlantic steerage passengers, en route to the West and Northwest, were landed at Halifax, Nova Scotia. Lately, through a change in the steamship service, this tide of travel, formerly directed to Halifax and Montreal, has been turned to Portland, where the passengers are now landed.



It is obvious that this influx of population should be thoroughly inspected at some point on the coast, before it invades the States. It is a matter in which the western and northwestern States are deeply interested, and prompt measures should be taken accordingly.

In this connection, it may be mentioned that a controversy has arisen between the State Board of Health of Michigan and the Provincial Board of Health of Ontario, Canada, as to the necessity for inspecting railroad trains passing into the United States from Ontario, Canada, along the St Clair and Detroit rivers, at Port Huron and Detroit, the former having recommended such inspection to the Supervising Surgeon General of the U. S. Marine Hospital Service, and the latter insisting that such inspection is not only unnecessary, but, is in violation of the spirit of the interstate and inter-provincial compact of 1886, between Boards of Health in the United States and Canada as to the inter-notification of the presence of contagious and infectious diseases. Further, that the Eastern States having adopted stringent inspection to prevent the passage of suspected persons, a further inspection at the points named could not be essential, while it would be vexatious and irritating. Large commercial interests are involved, the great railroad trunk lines being concerned.

The compact which recognized the Provincial Board of Health as the supreme health authority in that portion of Canada should be respected, at least, until it can be shown that it has proved recreant as to its duties. The public health interests should be carefully guarded, regardless of all other interests, and the danger of infection from the poor class of emigrants which we are now receiving in the West and Northwest is not merely fanciful, but real. The right of Michigan, and other border States, to defend themselves against this threatened danger is undoubted, but for manifest reasons, and in respect to that comity which should exist between ourselves and Canada, in public health and all other international questions, unreasonably multiplied inspections should be avoided. Here, in the United States we are impatient of frequent inspections.

The State Board of Health of Pennsylvania has invited the attention of State and municipal Boards of Health to the propriety of exhibiting before the World's Columbian Exposition, in an aggregate or independent form, the sanitary work of the entire country, upon some uniform plan, which should render the presentation of the subject worthy of attention and respect. To this end, a conference of representatives of the various Boards of Health (State and leading municipal) has been called to meet in Chicago about the middle of January, 1892.

It is not altogether clear what the State Board of Health of Kansas might do in such a representation. While not lacking in authority to make sanitary investigations, it is unfortunately closely limited as to the means. There being no State appropriation for the purposes of the exposition to which we might lay claim, we are seemingly powerless to make much of a showing.

Upon recently receiving from Dr. R. Alexander, Chemist of the Board, the microscope and appliances which have been in his possession for several years, the following articles were found missing, the invoice price of each being set opposite, viz.:

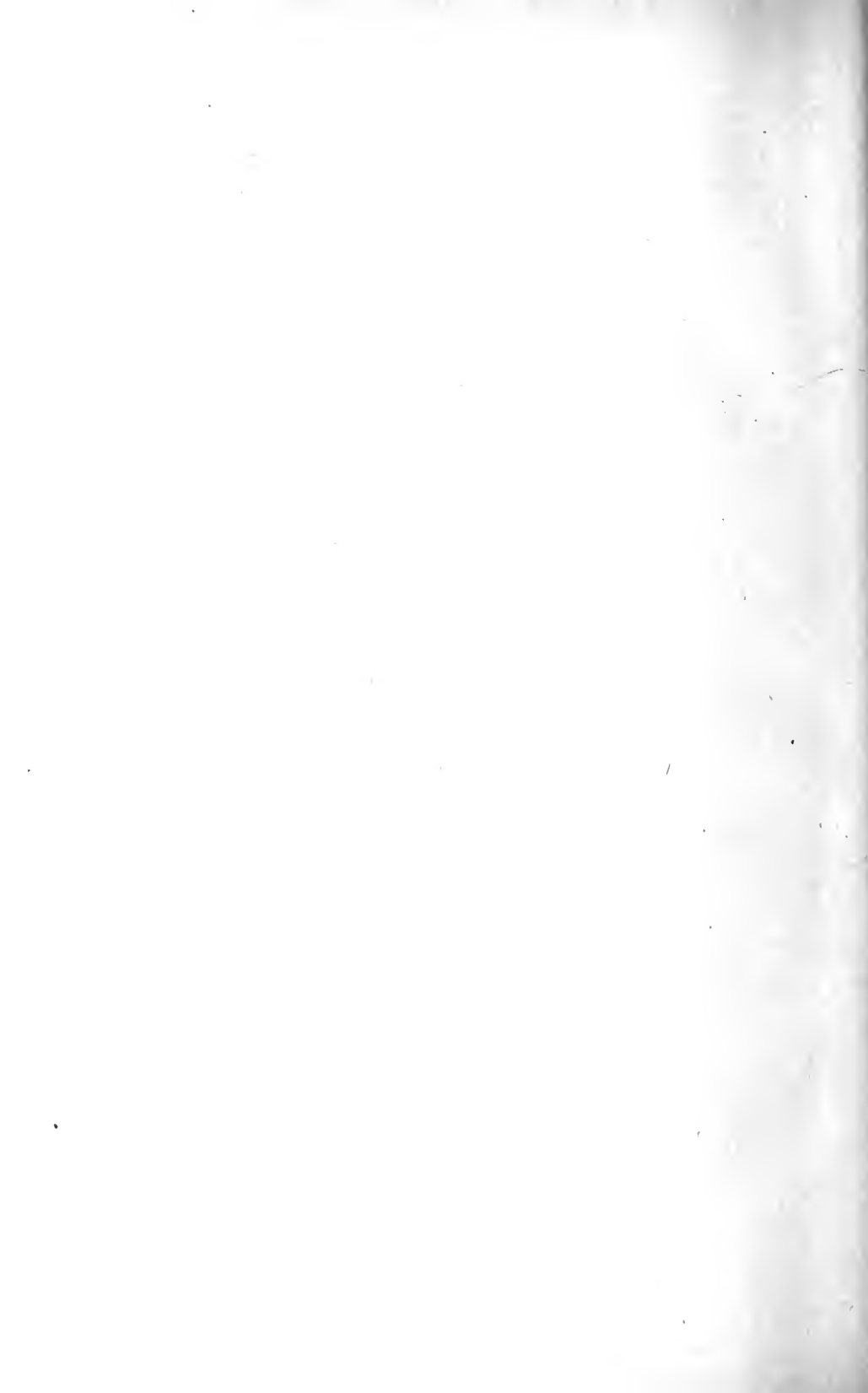
2 one-half-gallon retorts .....	\$1 96
1 litre bottles, 100 c. c. ....	34
5 small flasks. ....	50
1 porcelain evaporating dish .....	80
1 porcelain evaporating dish, 9 inch ...	1 60
2 graduated pipettes.....	1 28
1 nest of Griffin beakers.....	85
5 pipe-clay triangles.....	35
12 test tubes .....	35
12 test tubes, 6 inch.....	40

Inasmuch as all these articles were of a perishable nature, and have been broken in service, I recommend that they be dropped from the returns without recourse upon Doctor Alexander. The supplies received are in apparent good condition, and Doctor Alexander states that the microscope and appliances are perfectly serviceable.

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## APPENDIX.

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## MEMORIAL TO THE STATE LEGISLATURE.

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TOPEKA, KAS., February 10, 1891.

*To the Legislature of the State of Kansas :*

GENTLEMEN — We have the honor to present herewith, for the consideration of your honorable body, and enactment into law, the text of a bill which, in our judgment, would do much to promote the efficiency of the State Board of Health, by placing it upon a plane of action from which it may better and more satisfactorily supervise the important interests which have been committed to its charge. In the past, the Board has met with serious embarrassment in the prosecution of its labors and enforcement of its ordinances, and its inquiries have been necessarily restricted, through the advisory, rather than mandatory, provisions of certain sections of the law, as it at present exists; which defects it is the purpose of the proposed measure to remedy; and we confidently look to its successful passage, as it was the obvious intention of the original act to clothe the Board with ample authority for the effective performance of the duties prescribed therein.

In this connection we feel constrained to express our unfeigned surprise and deep humiliation at learning that the usefulness of the Board has been impeached before the State Legislature, its abolition proposed, and its purposes and labors assailed by the fierce and unfriendly criticism of those from whose loyalty and good report it had reason to look for its chiefest justification and refuge.

This is the more unfortunate and humiliating in that it would tend to prove the presence of dissension among its members, whereas, in point of fact, there has ever been entire accord and harmony; and because the members of the Board felicitated themselves upon having striven earnestly and unceasingly, with faithfulness and devotion, to so perform their duties as to win the support and encouragement of their fellow-citizens. To be sure, the operations of the Board have been quietly conducted and without any attempt at ostentation or display. The devoted, well instructed physician must content himself with being obscurely good. Nevertheless, the Board has labored, and labored well, and the consciousness of having done the best it could is not without its reward. It has encountered indifference and opposition in the prosecution of its labors, but an effort has been made on its part to conciliate prejudices as far as possible, knowing full well that Boards of Health and Health Officers always, and everywhere, meet with more or less discouragement.

The State Board of Health was only created in 1885, and is, therefore, as compared with similar boards in other States, still in its infancy. Considering this fact, and the lameness of the law bringing it into existence, and the limited means at its disposal — for there is nothing valuable without labor, and the laborer is worthy of his hire — its influence has been exerted, and is to-day felt, fully as much as could reasonably be expected. This will more readily appear from a comparison of the present status of health matters in this State — practically only a pioneer community — with that obtaining in old, long-settled States, which have fostered Boards of Health for a generation.

A considerable portion of the time of the Board has been unavoidably consumed in the necessary preparation for the work before it. Everything had to be done from the beginning. The preparation and distribution of blank forms; the formulation and publication of the Board's rules and ordinances; the establishment of local Boards of Health, and the bringing of such boards and their Health Officers into harmonious subordination and working accord with the State Board and with each other; the establishing of communication with the physicians and leading scientific men throughout the State, and the voluminous and interminable correspondence following thereupon, constituted a mass of preliminary work not generally appreciated. Besides which, the Board is fortunately able to refer to a vast amount of work of a purely professional character.

Since its organization, small-pox has invaded 20 or more counties of the State; diphtheria, 56 counties; scarlet fever, 40 counties; typhoid fever, 78 counties; epidemic dysentery, 24 counties; while scarcely a county has escaped some such visitation. And it may be added with propriety, that at this moment small-pox is present in at least three counties of the State. Filth diseases, like the poor, are ever with us. The cities of Topeka, Leavenworth, Wichita, Atchison, Emporia, Marion, McPherson, Holton and others have suffered from this disease in the past, and upon each and all of those occasions, in the watchful control and supervision, as well as in the final suppression of the diseases, the Board of Health has faithfully borne its part; while outside of the larger cities, where municipal or local Boards of Health are not habitually maintained, and where communities have been indifferent or apathetic, and neglectful of the presence of disease, almost the entire direction and management have fallen to its care.

In addition to this, it is only fair to enumerate its services in connection with the chemical and microscopical examination of public and private water supplies; the collection and tabulation of vital statistics; the inspection of State charitable institutions, etc.

But it is in the education of public sentiment upon matters relating to sanitary science that the Board has done its chiefest and most gratifying work. The inculcation of sanitary precepts is a plant of slow growth at the best, and unless an intelligent interest in its benefits is created among the people, it will scarcely make headway at all. To this end, thousands of pamphlets, popularly written, upon the cause and prevention of disease, and upon the disinfection of person and place, have been widely distributed, and with good effect, as is evidenced by the constantly-increasing inquiries on the subject, and the number of persons who enter more or less permanently upon some branch of sanitary investigation.

That the Board has encountered some opposition among the people at large, has already been adverted to. It was to be expected. The methods of a Board of Health and health officials are necessarily imperative and arbitrary. Their work is almost always a work of emergency, and thus tends, unavoidably, to inconvenience and discomfort, and often even to the curtailment, for a time, of the personal liberty and freedom of the citizen. Public and Sabbath schools must be closed, public funerals and assemblies interdicted; for complete and thorough isolation is the chief reliance in the presence of contagious or infectious disease.

That the Board has met with opposition, and violent opposition, from the medical profession, has also been referred to, and is, unfortunately, equally true, although less explicable. We know that professional jealousies, once aroused, are deep rooted and implacable, and, it may be, we have not paid that nice attention to professional carping and professional doubts and suggestions which policy would dictate. The members of the Board and all doctors are, after all, but human.

But, gentlemen, may not we infer something from the fact that it has been vouchsafed to us, above many others, to be given an office? That we can all be members or secretaries of the State Board of Health, is obviously as impracticable as that we can all be Senators or members of the Legislature. "Some will laugh while others must weep." From this it is not a violent transition nor a "far cry" to a point from which we may be spoken of as enemies of the State, unworthy your confidence or support.

Rarely exhibited and almost forgotten among men is that charity which gives credit of good intentions to those who stand in the way of our advancement. The Board, although comprising members from the three foremost schools of medical practice, has long since abandoned as a dream, more or less iridescent, the fond hope of being able to win the universal approval of its medical brethren.

However, in the main, among the people of the State who realize that we are laboring in the common purpose to build up the State, add to its material resources, and promote the health and happiness of its people, the Board is glad to be able to report that it has grown in favor, and made substantial progress.

In the administration of its finances, the Board claims to have been at all times prudent and economical, and would respectfully invite the closest scrutiny in this respect. There has been appropriated for its support from the beginning, in round numbers, \$26,000, of which only \$22,500 has been expended, and of this last sum more than \$1,000 was for permanent articles still on hand. Thus we have expended in the legitimate work of the Board about \$3,500 per annum. Surely, gentlemen, not a large sum. Compare it, if you please, with the appropriations made by other States of the Union for a single year—Illinois, \$50,000; Massachusetts, \$100,000; and so on. In the intelligence and culture of her people, and in their public-spirit-edness, Kansas would perhaps consider a comparison with the State of Texas as offensive and degrading to her dignity, yet Texas appropriated in 1888 \$100,000 for the support of its Board of Health.

But we will not further encroach upon your valuable time, gentlemen, nor impugn the intelligence of your honorable body by an attempt to instruct you as to your duty towards this Board, or upon the present status of legislation upon sanitary matters. We safely assume that you already know all that is needful for non-professional men to know on the subject. Let it suffice to say that every State and Territory of the Union, with scarcely an exception, and every progressive nation on the globe, is to-day giving closest attention to the promotion of public sanitation as the science which promises most for the health and longevity of mankind.

Statistics of sickness and death and their causes, and of the meteorological conditions coincident therewith, are being collected and formulated with great interest and with great expectations. The science of sanitation is the science of preventive methods. State medicine, it is called, and State Boards of Health are its practitioners. It has not for its primary object the benefit of the medical practitioner, as some ignorant people assume, nor is it the practice of medicine, although allied to it, but looks to the ultimate abrogation of that practice.

We suspect that he who waits for the actual onset of epidemic or other disease has waited too long; and it is scarcely a question which is the more meritorious, he who thus complacently waits to illustrate his skill in the suppression of a disease after it has laid its heavy hand on the community, or he who, by timely and effective interference, entirely prevents its appearance or aborts its virulence.

"Peace hath her victories no less renowned than war." The people need to be protected from themselves. It is a woefully mistaken idea that an epidemic must actually prevail before there shall exist a need for sanitary precautions. It is a

meditation upon death. The Chinese do not permit the physician thus to trade upon disease, but recompense him only during a continuance of good health.

Admitting, then, if you will, the necessity for intelligent sanitary work (upon the principle that an ounce of prevention is worth a pound of cure), in what manner, or through what agency, may it be more successfully or economically conducted than by a State Board of Health. Centralized power, removed from and independent of distracting and misleading local interests and prejudices, is absolutely essential to success. The experience of the Board in the formation of local Boards of Health, and subsequently in the observation of their dilatorious and circuitous methods in dealing with disease, in the presence of varied and complex personal interests, should be conclusive on this point.

The members of the State Board of Health themselves are not in favor of long-continued centralized power in the hands of any board, and, after a time, when the people shall be better instructed as to their duty to each other, and their true interests, and the local Boards of Health shall be brought to an intelligent, fearless and effective discharge of their duties, the need for the continuance of the strong, central directing power, will no longer exist, and may be returned to the State. But in Kansas to-day, in the protection of her water courses from pollution; in the prevention of the adulteration of food products and drugs; and in the general instruction of her rapidly changing and increasing population upon matters pertaining to public hygiene and health, there is need for an authoritative, aggressive Board of Health, no less than exists in any other State.

Being in the line of interoceanic travel, and midway of that line, our State has been in the past, and to some extent still is, the favorite dumping ground of indigent, diseased and demented persons. Besides which, the immunities long afforded us by distance and obscurity, not to say difficult and dangerous travel, having been abolished by the improved and widely-extended means of communication, the sea-boards are practically brought to our doors, and the State is thus confronted with a new and dangerous menace to the health of her citizens.

The history of the commonwealth thus far abundantly shows that she is not unmindful of the material interests of her people. Look at the various boards which have been appointed to this end. It is difficult to believe, in the absence of all evidence, that she begrudges the meager support thus far given to her Board of Health, because there can be no higher concern of government than the shielding of the citizen from the ravages of disease and death.

Shall the State Board of Health be abolished? Shall Kansas be the first among the States to take this retrograde step? are questions, gentlemen of the Legislature, of far greater import than any which relate to the personnel of the Board, as at present constituted, or to the law under which it exists, or even to the deserts of this particular Board, because, if the personnel is faulty, it can be remedied, and if the law is insufficient or defective, it may be amended. While the Board of Health, as a State institution, if it is permitted to go down now, will go down for a long time, and meanwhile there must take place a total disorganization and disbandment of the forces which have been brought into existence only after years of patient and unremitting effort on our part, and a general languishment of the health interests of the State must inevitably follow, to the serious detriment of the people.

We cannot believe that the public interests at this time demand such a sacrifice; but, on the contrary, we believe and are firmly convinced, that not only should the Board be continued, but that, because it deserves well of the State, whose confidence it has in no wise abused, it should also be strengthened in power and encouraged in its work by the legislative branches of the State government.



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The bill referred to in the foregoing memorial provided for more specific power on the part of the Board, chiefly by way of prescribing penalties for failing to do that which is enjoined by the law at present, but for which no penalty is prescribed. It also provided for fixing the term of office of the Secretary of the Board to — years. The bill itself is not given.

## SPECIAL REPORTS ON CONTAGIOUS DISEASES.

## SMALL-POX IN CHAUTAUQUA COUNTY.

Report of Dr. H. D. HILL, of Augusta, member of the State Board of Health.

AUGUSTA, February 11, 1891.

According to instructions received January 29th, I proceeded to Sedan without delay, arriving there the day following telegram. Upon inquiry, I found that the cases alluded to resided from five to seven miles northeast of Sedan, and I visited the neighborhood in the afternoon of the same day, the mayor of the city of Sedan, by my request, accompanying me. I found seven persons sick with small-pox, and many more exposed, and up to this time no means had been provided to prevent its spreading, the community paralyzed with fear, and awaiting with folded arms further developments of the disease. The first person attacked was Doctor Crandall's wife, who had a mild attack; and the doctor, not being familiar with the disease, failed to recognize it until dozens had been exposed among his relatives and neighbors. I issued a proclamation, placing the district affected under strict and rigid quarantine, ordering every possible preventive measure to be used to prevent further spread, red signal flags and placards of warning to be placed in view upon the infected houses, and isolation, vaccination and strict disinfection to be resorted to in all cases. I appointed Dr. J. P. Graham as Health Officer, to see that all orders were faithfully carried out, and to take such other measures as might become necessary upon further developments of the epidemic. He was to supply the stricken district with virus for vaccination, and trained nurses and the proper medical attention for the sick. The existing conditions are sad to contemplate, as very few were protected by vaccination, and many women and children had been exposed. But for the prompt establishment of quarantine, the disease would certainly have spread in every direction, thereby exposing many more.

As I could find no case of small-pox in Sedan, I did not feel warranted in placing the city under quarantine, but by written instructions directed the most strict precautions and thorough vaccination in every case not protected by having had the disease. Also directed that all public meetings in churches, school-houses and public halls be forbidden, and the gathering of crowds on the streets be avoided. By my request, the County Commissioners were notified to meet in special session, and organize a local Health Board for the purpose of taking proper steps for further protection against the disease. I am pleased to report that the authorities and citizens of Sedan cheerfully rendered to me all necessary assistance in their power for the suppression of the threatened scourge in their midst.

The appended list shows the names and history of those now sick with small-pox, so far as it was possible to obtain it.

Doctor Crandall informed me that he had no knowledge as to where his wife contracted the disease. I heard from other sources, that the circumstances pointed strongly to its having been contracted while traveling in a public conveyance in Californin.

## LIST OF THE SICK.

J. Myers, aged 45, semi-confluent small-pox.

C. C. Crawford, aged 16, discrete small-pox.

E. Crandall, aged 4, semi-confluent small-pox.

D. Adams, aged 7, discrete small-pox.  
A. Crandall, aged 11, discrete small-pox.  
Mrs. Crandall, discrete small-pox.  
Mrs. Myers, discrete small-pox.

All had been exposed to the disease early in January, and exhibited the first symptoms of the disease in the latter part of the month, or in about 14 days after exposure.

Mrs. Crandall was the only one who had been vaccinated. All white; born in the United States.

#### SMALL-POX IN LYON COUNTY.

Report of Dr. J. W. REDDEN, Secretary State Board of Health.

TOPEKA, February 15, 1891.

On February 3d I received a numerously-signed dispatch from Bushong, Kas., demanding an investigation by the Board of the reported case of small-pox at Allen, Kas. It being impracticable to send a member of the Board, I was directed to visit the town of Allen and investigate, which I did, reaching there February 4th.

I proceeded at once to Dr. E. H. Shellac's office, and made complete inquiries of Dr. Shellac as to the origin and occasion for the dispatch. He informed me that he had a case of varioloid in the person of Phoebe Bates, aged 14 years, residing with her parents in the edge of the village. Allen is located on the Colorado line of the Missouri Pacific Railroad, in the northern part of Lyon county, 20 miles west of Osage City. Doctor S. kindly invited me to accompany him to see the patient and make such investigation as I desired. We went at once to the dwelling, where I found that Doctor Shellac had ordered and enforced strict quarantine over the family. The girl had varioloid. Some of the pustules were still full, some umbilicating, and on some crusts had formed. During the prevalence of small-pox in Bushong, a village on the same road, five miles west of Allen, two years ago, this patient, as well as the citizens of Allen and vicinity, had been thoroughly vaccinated, and she exhibited a well-developed vaccine scar.

It was not difficult to make a diagnosis in this case. The family seemed willing to do anything that was thought best for the interest and protection of the people.

In further conversation I learned from Doctor Shellac that a daughter of R. A. Reabun, merchant of the village, had been affected with an eruption which the family thought was chicken-pox. By consent of the father we visited this girl, about 14 years old, and found another case of varioloid.

Quarantine was established in both families, patients isolated, public schools and church services suspended for two weeks, and a general vaccination ordered. All of these instructions were promptly and effectually enforced, and the result was that the disease was confined to the two cases, both of which recovered.

The origin of the disease was probably from infected clothing, not properly disinfected, in a family which had had the disease in Bushong two years previously.

This admirable result is commendable, and forcibly illustrates the virtues of preventive measures, and the value of prompt and efficient action on the part of all concerned.

#### MEASLES IN LANE COUNTY.

Report of Dr. J. A. COLLEY, of Farnsworth.

July 17, 1891.

The disease first appeared in the family of M. E. Miller, which had but just a week before returned from a visit to northwest Missouri, where they had passed the winter. A little daughter of three years was taken sick April 15, with what was thought to be croup, and her throat swathed with cloths saturated with coal oil. I

saw the case on the 17th. The eruption had appeared on the neck, face, and chest. The eyes had the characteristic appearance; the case looked like measles. However, having in mind the coal-oil treatment, I reserved my opinion. The following day I did not hesitate to pronounce the disease measles, and immediately gave the alarm. Several of the relatives had already been exposed. The family had not heard of measles during their absence from home, but thought the disease must have been contracted in the cars.

On April 25th, the child's mother became affected, and two days later the grandmother. On the 29th, Mrs. Miller's father and brother were stricken with the disease. May 10th, Mrs. Brown's little girl of two years, and the following day Mrs. Brown herself, were taken down.

In all the cases the disease ran a normal course, and all recovered, save Mrs. Hobbs, the grandmother, who has since died, 57 days after the appearance of the rash; not from measles *per se*, but from pulmonary tuberculosis, whose fires were already burning, and whose flames the measles had evidently fanned, with the result I had predicted, even before she contracted the measles. The eruption came out well and remained out for four days, desquamation following.

Mrs. Brown, who was *enciente* when taken down with the disease, carried her child to full term, and gave birth to a healthy, well-developed baby.

The infected houses were less than a quarter of a mile apart. Have heard of no other cases in the county.

#### SCARLET FEVER IN LABETTE COUNTY.

Report of Dr. L. T. STROTHER, of Mound Valley, County Health Officer.

MOUND VALLEY, August 17, 1891.

There was an epidemic of scarlet fever of considerable severity and extent in the central portion of our county during the month of March of this year, quite an extensive epidemic of measles prevailing at the same time. The eruption and desquamation in these cases were very slight, in some instances escaping observation. The sequelæ were generally severe and protracted, assuming the form of parenchymatous inflammation of the tonsils and parotid and submaxillary glands, and also forming abscesses in the region of these glands, followed by a discharge of pus from the ears, etc. The deaths were all due to these complications.

In the city of Parsons, two physicians report 13 cases and two deaths. Number of families not stated.

The physicians of Altamont reported 14 or 15 cases, all mild; only one death. Number of families not stated.

Around Mound Valley there were 21 cases, occurring in seven families, with one death. We have not been able to trace, or in any way account for, its appearance in Mound Valley. It was thought by some families in Parsons that their children had contracted the disease while in attendance upon a funeral of a child in that city, although no warning had been given of danger in the case.

#### DIPHTHERIA IN SHAWNEE COUNTY.

Report of Dr. F. W. BAILEY, of Topeka, County Health Officer.

TOPEKA, August 8, 1891.

On Tuesday, July 21, 1891, H. Karlsson and family arrived in Topeka from Sweden, via New York city. The family consisted of wife and three children, aged 11 years, 7 years, and 18 months. They took a hack at the depot and were driven at once to the residence of W. F. Franzan, whose family consisted of wife and two

children, aged 3 years, and 15 months. At New York the Karlsson family were quarantined for a few days, on account of the sickness of the youngest child, who was said to have had measles.

On July 24th, three days after their arrival in Topeka, this child was seen by Doctor Grubbs, but no positive diagnosis was made. The eldest Franzan child was taken sick on the same day, and on the following day the remaining three children were found to have fever and sore throats. On the following Sunday Doctor Grubbs saw the cases again, and pronounced them diphtheria. As County Health Officer, I was notified of the outbreak, and a strict quarantine was established, not only over the inmates of this house, but also over a neighbor's house, whose inmates had associated with the stricken family.

On Monday, Doctor Colcord took charge of the cases, and the following condition was found to exist at that time: The youngest Karlsson child was suffering from very severe lymphadenitis of the right side of the neck and jaw, with diphtheritic ophthalmia, and nasal and post-nasal passages completely covered with gray membrane, extending over the upper lip and invading the skin of the face, presenting several small ulcers; pulse was small and weak, and extremities cold. The child lay in a semi-comatose state from which it never recovered, dying Tuesday evening. The eldest Franzan child was suffering from laryngeal obstruction, the membrane seen in the pharynx being black, thick, and exceedingly offensive. The disease pursued the same course as given in the preceding case, child dying Tuesday evening.

In the remaining three children, the same symptoms prevailed, though in a less-marked degree. These cases went on to convalescence, with the exception of the youngest Franzan child, who was taken with acute nephritis, accompanied by suppression of urine, and died from uræmic poisoning.

All precautions were taken to prevent the spread of the disease. Antiseptics were freely used, and those who died were wrapped in sheets saturated in chloride of zinc solution, and buried privately. The quarantine was raised August 5, and no new cases have been reported or heard of up to this date.

#### SMALL-POX IN GEARY COUNTY.

Report of Dr. GEORGE E. HARVEY, County Health Officer.

JUNCTION CITY, August 31, 1891.

Small-pox made its appearance in this city January 15, 1891, in a colored family named Gunn. On this date, Georgie Gunn, aged 13 years, without any premonitory symptoms, was discovered to have an eruption. Doctor N. was called, and after a day or two pronounced it small-pox, but as the child was not at all sick, the diagnosis was thought sensational and little or no attention given the case. On the 29th of the month, two other children of the family exhibited the eruption. On February 5, the County Health Officer, Doctor D. pronounced the children affected with chicken-pox, this opinion being confirmed two days later by another physician, Doctor S. Doctor N. still contended that the disease was small-pox. The matter was allowed to remain in this way during the month of February. In the meantime seven of the family had become affected, and the disease had extended to two other colored families, named Hurley and Richardson.

The Gunn family claimed that none of them had been abroad nor had anyone visited them for a year. The question arises: Whence the contagion?

On the 7th of March, I was requested by Doctor R. to visit Mrs. Hurley, and I had no difficulty in recognizing a case of small-pox, in the eighth day of the disease, and fourth day of the eruption. Upon inquiry, we found that Mrs. Hurley had visited

at the house of Mrs. Gunn during the first half of February. Mrs. Hurley and her three children had the disease, all typical cases.

A colored family named Richardson likewise contracted the disease from the Gunns, five of the children being attacked in a mild form, only one going to bed.

I became County Health Officer on April 15.

The disease next appeared in a white family named Fenton. On the 10th of February Mrs. F. and her children went to Clay Center to visit her mother, returning on the 21st of April. A small portion of the journey was made by railroad. On the 5th of May her four-year-old boy was taken with high fever, pain in head, back, and limbs. On the 9th an eruption appeared which she thought was scarlet fever. No physician called. I saw the case on the 12th, and recognized it to be small-pox. Five typical cases were treated in this family.

The disease next appeared in a family named Franklin; white; himself having it. On May 17 he went to Texas, traveled about two weeks, returning on the 30th of the same month. On the 19th of June he was taken with high fever, severe pains in head, back, and limbs; eruption appeared on the 22d. I saw him on the following day, and pronounced the disease to be small-pox. The family consisted of wife and a grown daughter. Both had been vaccinated three years before. Neither one took the disease. The question arises, Did he contract the disease here or in Texas?

The next case occurred in a white family named Bush. A little girl aged three years was taken sick June 13 with high fever; was treated by Mrs. Doctor A., who pronounced it a case of rhus poisoning, notwithstanding a temperature of  $104\frac{3}{4}$  degrees. The case was thus treated for eight days, when the mother, becoming uneasy, sent for another physician, who, after seeing the case, reported it to me. I found it to be small-pox, in the eighth day of the disease and fourth of eruption. Two cases in this family. They had not been out of town, and had had no visitors.

Quarantine regulations were enforced in all the cases, after I became Health Officer, for 14 days after desiccation was completed. Bed clothing thoroughly disinfected and washed; such articles as could not be washed were burned. Walls of room scraped and fumigated; in some instances repapered; in others whitewashed; and in exceptional cases replastered.

In the last three families where the disease prevailed, there were numerous exposures. Mr. Franklin was visited by his neighbors, after the eruption had appeared, for hours at a time. Baby Bush was nursed for hours by the neighboring women until the eighth day of the disease; of course this was before the cases were properly diagnosed. A strict watch was kept on those parties until the incubation period had passed, but no case was developed. It has now been more than six weeks since the last case was pronounced convalescent, and 30 days since the last quarantine was removed.

I append a tabulated statement of the cases.

TABULATED STATEMENT OF SMALL-POX CASES AT JUNCTION CITY, GEARY COUNTY.  
(Report of DR. GEORGE E. HARVEY, County Health Officer.)

Date of first symptoms.	NAME.	Age—years.	Color.	First symptoms.	Date of eruption.	Form of disease.	Remarks.
Jan. 15.....	Georgie Gunn.....	13	Colored	Eruption.....	Jan. 15.....	Discrete.....	Never vaccinated.
" 29.....	Maggie Gunn.....	8	"	"	" 29.....	"	"
" 30 .....	Hattie Gunn.....	6	"	"	" 30.....	"	"
Feb. 2 .....	Henry Gunn.....	10	"	"	Feb. 2.....	"	"
" 4 .....	Cal. Gunn.....	12	"	"	" 4.....	"	"
" 7.....	Fannie Gunn.....	4	"	"	" 7.....	"	"
" 8 .....	Warren Gunn.....	42	"	"	" 8.....	"	"
" 10.....	Willie Richardson.....	10	"	Head- and backache, and fever.....	" 13.....	"	"
" 21 .....	Maude Richardson.....	15	"	"	" 27.....	"	"
Mar. 3 .....	Mrs. Hurley.....	23	"	{ Pain in head, back, and limbs; high fever; temperature, 105°.....	Mar. 7.....	"	Vaccinated at some time.
" 6 .....	Della Richardson.....	9	"	{ Headache; fever; pain in limbs.....	" 8.....	"	Never vaccinated.
" 10 .....	Walter Richardson.....	4	"	{ Fever; headache; pain in limbs.....	" 12.....	"	Vaccinated unsuccessfully.
" 12 .....	Charlie Richardson.....	22	"	Pain in head, back, and limbs.....	" 15.....	"	"
" 17 .....	Annetta Hurley.....	5	"	Light fever.....	" 20.....	"	Not vaccinated.
" 18 .....	Catharine Hurley.....	3½	"	"	" 21.....	Confluent.....	Vaccinated unsuccessfully.
" 21 .....	Avena Hurley.....	1½	"	"	" 25.....	Discrete.....	"
May 5 .....	A. C. Fenton.....	1	White	High fever; delirium.....	May 9.....	"	Not vaccinated.
" 19 .....	Hattie Fenton.....	2½	"	Fever; convulsions; delirium.....	" 22.....	"	Vaccinated.
" 20 .....	M. A. Fenton.....	14	"	"	" 24.....	"	Vaccinated 4 years ago.
" 20 .....	Lottie B. Fenton.....	9	"	High fever.....	" 24.....	Confluent.....	Vaccinated unsuccessfully.
" 25 .....	Mabel G. Fenton.....	3 mos.	"	Light fever.....	" 27.....	Discrete.....	"
June 13.....	Baby Bush.....	3	"	Fever; temperature, 101½°.....	June 16.....	Confluent.....	Never vaccinated.
" 19 .....	W. J. Franklin.....	50	"	{ High fever; temperature, 105°; severe pain in head, back, and limbs.....	" 22.....	Discrete.....	Vaccinated 40 years ago.
" 27.....	Florence Bush.....	7	"	{ Fever; temperature, 105°.....	" 30.....	"	Never vaccinated.

Desiring to elicit further explanation upon some features of this report, we addressed the Doctor as follows:

"We have received your special report in the small-pox outbreak, and thank you for it. It seems to be all that could be desired in every essential respect, except that we would like to have your opinion as to the origin of the disease, and relation of the various cases to each other. In your opinion, did the disease originate in the Gunn family, *de novo*? Of course you have already made inquiries on this point, but inasmuch as the statement of the parties was faulty, as shown by the extension of the disease into the Hurley family, it is possible that a further questioning of them may develop something of interest as to the origin of the disease in their own cases. This is a very important point. Also your opinion as to the cause of Mrs. Fenton's case. Can you positively exclude relation between her case and the Gunn and Hurley cases? Was the disease present in Clay county where she visited about that time? or was it probably contracted in the cars?

"Again, as to the Franklin case: What is your opinion as to its origin and cause? It would appear reasonable to assume that he must have communicated with the Fentons in some way; although, of course, we cannot entirely preclude the possibility of outside contamination.

"As to the Bush case: Do you exclude the possibility of communication with the others?

"A significant fact appears in connection with the immunity afforded Franklin's wife and daughter -- by vaccination, as we must believe.

"This view is strongly supported by the history of the Gunn cases, and, indeed, throughout all the cases, in a singularly conclusive way. In this connection, it would be interesting to have the history of the exposures in this respect, as far as possible. You have stated that in the last three families there were numerous exposures without the development of a case.

"Finally, we would like to know what important fact, if any, has been inculcated by your experience in these cases. What do you suggest as to the future conduct in such an outbreak? Please give us your views fully as to all the points suggested, as we desire to have them published in connection with the report."

The following is his reply:

"I do not believe the disease originated, *de novo*, in the Gunn family, but rather that it sprang from the virus left over from our previous visitation, in the spring of 1889.

"The communication between the Gunn and Hurley families is well established.

"The extension of the disease to the Richardson family is probably accounted for by the fact that Willie Richardson, a boy of 10 years, visited the Gunns late one night, going over after his folks had retired, and wearing home a pair of gloves taken from there.

"In the Fenton case, the disease did not exist in the neighborhood where she visited, nor along the route of travel, so far as can be ascertained. The family returned April 21st, and the first case appeared on May 5th, within the stated period of incubation. However, I am of the opinion that the Fenton boy contracted the disease from the Hurleys, living less than two blocks distant, through playing with the dogs belonging to that family, which were running backwards and forwards between the premises.

"Mr. Franklin returned home from Texas on May 30th, and was taken sick June 19th, 20 days thereafter. It is clear we must look to this city as the source of infection in his case. He informs me that he passed the Fenton premises several



times daily, after his return home and until his sickness, but never closer, he thinks, than 30 feet. Our medical authorities claim six or eight feet is the limit of danger in the open air; but it may be that, with a strong, favorable wind, this limit should be increased. At all events, he thinks he contracted the disease in this way, and I am disposed to agree with him.

"Mrs. Bush and her baby attended memorial services on May 30th, both in the city and cemetery. The baby was taken sick June 13th, barely within the limit. It is probable that during the day the child was brought in close contact with some of the other affected colored children, and thus contracted the disease. It is known, too, that Mrs. Bush had, at her home, some clothing belonging to the affected families. This fact was not brought out before. It is quite difficult to get the whole truth in these cases.

"Since writing the foregoing, I have again interviewed Mrs. Bush, who stated that her children frequently play on the sidewalk and in the street fronting the house, and that the Gunn children, in going to and returning from town, always passed the house, and sometimes would stop and talk, and, possibly, join her children in play.

"The exposures were numerous, but have not, thus far, developed a case of small-pox.

"Mr. Franklin was visited on the second day by two neighbors, both of whom had been vaccinated three years before. On the third day, another neighbor came. He had been vaccinated in childhood.

"The Bush family was visited on the seventh day by a neighbor woman and her three children, and six other persons, all female. Mr. Bush, his two boys, and a seven-year-old girl remained in the house during the whole period of sickness.

"The Fentons were visited by several persons after the eruption had appeared.

"At Hurley's there were five visitors on the seventh day of the disease.

"So far as I can learn, all these visitors had, at some time, been vaccinated."

#### SCARLATINA IN SHERIDAN COUNTY.

Report of Dr. I. A. WINTERNITZ, County Health Officer.

Hoxie, November 13, 1891.

We have had four well-marked cases of scarlatina in this city. Three cases were of a mild form, and one a typical case, attended with all the symptoms of the disease. I have been unable to trace the source of the infection. The first case occurred more than two weeks since, and has made a complete recovery, with no sequelæ, thus far.

The members of the affected families were kept from school. I have had a meeting of the school board, and the directors will this afternoon call a mass meeting of the people, to determine as to the advisability of closing the school for a couple of weeks, or as long as may be necessary.

There are a number of cases of ulcerated sore throat, pharyngitis, and tonsilitis, the same as usually attend an outbreak of this nature.

Advise me if any other precautions are necessary, and as to my duty under the circumstances.

#### DIPHTHERIA IN JEWELL COUNTY.

Report of Dr. WALTER CREW, County Health Officer.

Mankato, November 25, 1891.

Since receiving your letter, I have visited White Mound, Burr Oak and Walnut townships, and found there had been, during the months of July, August, and Sep-

tember, 150 cases of diphtheria. Thus far in November, there have been four deaths. The disease, in a great majority of cases, was of a mild form, and yielded readily to treatment, especially when due sanitary precautions were enforced.

However, as has been frequently observed, the disease appeared among the clean and unclean alike; but it was thought that the cases occurring among cleanly families recovered more speedily and yielded a lower mortality. It is certain the disease was modified somewhat by sanitary measures.

The disease spread generally by contagion, extending rapidly, attacking all of the children of an affected family. Premises were quarantined with considerable thoroughness; but, in spite of all precautions, many children were exposed, and in nearly every instance came down with the disease, thereby demonstrating its contagious nature.

A few families became affected which had been guarded so carefully that we could not attribute the cases to contagion, unless the disease was carried in the clothing.

The family in which occurred the greater number of fatal cases, was Mr. Bernard's. In this family there were nine cases and six deaths. The house and surroundings lacked much of being clean. Near by was a cellar, which had caved in and was partly filled with rubbish and filthy water. Near this cellar was the well from which the family was supplied. When this well was cleaned out, a large quantity of filth was disclosed.

The cases in Mr. Bernard's family were of a malignant type from the beginning. However, under treatment and proper sanitary measures, all of the cases seemed to improve, until a severe storm of wind and hail came up, taking away the roof, flooding the house with water, and covering the beds, in which the sick were lying, with hail. This exposure, it is thought, caused the death of four of the children, who otherwise might have recovered.

The cases nearly all occurred in the practice of Doctors Hawley and Kirk, of Burr Oak, in about equal proportions.

I was informed to-day that two more deaths had occurred in Burr Oak, and that the worst of the cases had not been made known. I think five months is long enough for diphtheria to run unchecked or unmodified, without a close investigation and search for its cause.

The physicians seem to think I am intruding when I ask about their cases, or attempt to look at them. If the condition of things does not improve soon, it would be well for one of the State Board of Health or yourself to come down here, and we will, together, see if anything can be done to check the progress of the disease. I learn that, for the past three years, the same locality has developed a case or two of diphtheria at short intervals.

Please make such suggestions as you deem proper.

Dr. Thos. Kirk, jr., of Burr Oak, having been written to on the subject, replied as follows:

"I attended the first case of diphtheria in January, 1890, and since then cases have occurred with seldom more than a week's interval. The disease has extended over a territory surrounding Burr Oak, embracing a radius of from six to 12 miles. In all, I have treated from 150 to 200 cases; but until this summer had only one death, the number of cases being about the same. Late this summer, we lost six cases in one family, chiefly, I think, the result of a drenching rain and hail storm, to which they became exposed. Since then, we have lost two cases, both complicated.

"At present I have no cases, and know of none. I think the disease has abated.

The greater number of the families have been isolated, so that few have contracted it by contagion."

Dr. J. E. Hawley, of Burr Oak, was asked his views on the subject. He writes:

"We have had several cases of diphtheria in the vicinity of this place, but never has it assumed as serious a form as Doctor Crew has probably led you to believe. I have treated probably 150 cases in the last year, (not for three years, as stated,) most of them in the past six months. At present I do not know of a case. The last one in this city was three weeks ago. Strict quarantine measures are being taken, and I think all danger of the disease spreading is passed.

"Thanks for the circulars. As a member of the city council and school board, I would be glad to receive any information which will aid us in eradicating the disease should it again appear."

It is proper to add that, under the stress of the outbreak in and around Burr Oak, a Board of Health has been appointed in that city.

#### DIPHTHERIA IN MITCHELL COUNTY.

Report of Dr. I. R. SWIGART, County Health Officer.

BELOIT, December 10, 1891.

Diphtheria has appeared sporadically in several parts of the county. The source of the contagion could not be made out in every case, but occasionally there was little difficulty on that score.

The following interesting case is presented in this connection. A family residing four miles south of this city was visited by the disease under the following circumstances: In the month of September last, a 13-year-old girl of this family wrote her aunt, residing at Grand Island, Neb., for some pieces for a crazy-quilt. The aunt responded by sending some pieces cut from the clothing of her little boy, who had died of diphtheria about four years previously. The package came through the mail, and the pieces were used by the little girl. In eight days thereafter she was taken down with diphtheria, but rallied, and finally recovered. Four days after she was taken ill, her brother, aged 11, was taken down, and in seven days died. The mother of these children was in the last stages of consumption about this time. Her throat became more or less sore; she was unable to swallow without severe pain. The husband consulted a physician, who did not see the case, however. The woman would not tolerate any treatment, and, owing to the peculiar circumstances, none was given. She died November 13th.

In the meantime, following the boy's death, the premises and clothing had been thoroughly disinfected.

About 10 days after the death of the woman, a sister, who had attended her during her last illness, was taken with a very sore throat, for which, however, no treatment was had, it being regarded as the result of a cold.

On the 25th of November, a son of this woman, a boy of eight years, was taken with diphtheria of a malignant type, and died December 1st. His sister, aged 10, was taken down with the disease November 29th, and died December 4th. On December 5th, another sister, aged four years, was taken down, and, at this writing (December 10th) is in a critical condition.

In another family of 13 members, the origin was less clear. A girl of three years was taken with the disease, and for the first four days received no treatment; she died two days later. The remaining members of the family were put upon prevent-

ive treatment, and due precautions taken. The day of the funeral, seven days after the little girl was taken sick, 10 out of the 12 were taken down, but all have recovered. The other two were not affected.

We have physicians in this county who insist that diphtheria is neither contagious nor dangerous.

#### DIPHTHERIA AT WICHITA.

Report of Dr. P. D. ST. JOHN, County Health Officer, and secretary of the City Board of Health of Wichita.

WICHITA, December 28, 1891.

Diphtheria existed in an epidemic form in this city for a considerable portion of the time between July 12, 1891, and the present time.

Total number of cases to date.....	118	Average age of female cases.....	6.5 yrs.
Total number of deaths.....	30	Number of deaths, male.....	14
Percentage of deaths.....	25.4	Number of deaths, female.....	16
Total number of cases, male.....	59	Average age of fatal cases.....	5.4 yrs.
Total number of cases, female.....	58	Greatest age among male patients.....	20 yrs.
Average age of male cases.....	6.7 yrs.	Greatest age among female patients....	89 yrs.

Greatest fatality was in the month of September.

I have earnestly endeavored to ferret out the origin of this outbreak in vain.

The first case of the disease occurred in the family of Mr. McClelland, boarding at the Metropole Hotel in this city. Little Emma McClelland, aged about five years, died April 14. The case was not officially reported, but the proprietor of the hotel states it was diphtheria; the undertaker's certificate states it was membranous croup. It was diphtheria without doubt, as the consulting physician has stated to me.

The father of the deceased is a traveling man, but he had been away from home for some weeks. However, it is my opinion the disease was brought to this hotel by some traveling man or men, or people traveling through here, hailing from some place where the disease was then prevailing, as at Denver, Joplin, Mo., and others. At all events, I can trace it to no other source.

The case of Baby Frazer, aged two years, was the first case officially reported. The family next attacked resided only a few doors distant from this case.

A public funeral of one of the cases about this time undoubtedly served to extend the disease.

You will observe that all the cases occurred among white people; no cases reported among colored people.

I know of nothing connected with the sanitary condition which would be worthy of consideration in connection with the origin of the disease. Under the stress of the situation, a City Board of Health was appointed, and vigorous measures taken to stamp out the disease. The following are among the measures adopted, as circumstances seemed to indicate.

1. Physicians must report all case of contagious and infectious diseases coming under their care (as per city ordinance, section 12, ordinance 569), to the secretary of the Board of Health, Doctor St. John, office 120 East Douglas, within 24 hours.

2. Upon receiving such report, the secretary shall direct the sanitary police to at once flag the house and notify the family, and see that all persons except physicians and nurses, who have been exposed to the disease, must be kept rigidly at home until such disease has disappeared, and until the house, contents and premises have been thoroughly disinfected.

3. When all this has been thoroughly done and the secretary has been informed in writing by the attending physician that such disinfection has been done, then he shall direct the sanitary police to remove the flag.

4. In the disinfection of houses, the walls of occupied rooms should be scraped and re-papered, or thoroughly whitewashed or calcedined, carpet disinfected by heat, floors and furniture thoroughly cleansed, as well as all clothing used in the room, in a manner as shall be prescribed by the attending physician.

*Resolved*, First, that all public funerals in cases of diphtheria and scarlet fever are hereby prohib-

ited, and the people are urged to keep themselves and their children as far away as possible from possible places of infection.

Second, That we urge physicians to carefully report all cases at once, and to impress all their patients and friends with the necessity of using the utmost precaution by isolation and disinfection, to the end that the disease may be quickly controlled—especially in view of the approach of the time for the opening of the public schools.

Third, That physicians are required to report all cases of death from diphtheria or scarlet fever immediately.

Fourth, Failure to comply with the above requirements will be enforced by the penalties prescribed by law.

*Resolved*, By the Board of Health of the city of Wichita, that we earnestly recommend to the school board of said city the advisability of postponing the opening of our public schools from next Monday, the 14th inst., to a later date, to be determined by such circumstances as the immediate future may develop.

Under these various precautions, the violence of the disease abated, until, at this writing, we have but one remaining case of diphtheria, with a prospect of being entirely free from the disease within a short time.

#### SCARLET FEVER IN WILSON COUNTY.

Report of Dr. A. C. FLACK, secretary City Board of Health, Fredonia.

FREDONIA, February 3, 1892.

An epidemic of scarlet fever made its appearance in our city in July of last year, and, owing to the mild character of the epidemic, no physician was called to see the first cases. About the middle of August, a case was seen and recognized by a physician. An investigation proved that there had been 15 or 20 cases in different parts of the city. New cases were developing weekly. No adequate quarantine was attempted, or the proper means of disinfection enforced. Our public schools opened the second Monday in September, and by the end of the second week there were so many new cases it was deemed expedient to close the schools. The mayor appointed a local Health Board, and active measures were at once taken to stamp out the disease. No new cases developed, and in two weeks the schools were again opened. The last week in November, owing to some unknown source of infection, eight new cases developed. It was then decided to enforce a more rigid quarantine for 30 days. All churches, schools, lodges, and places of private and public gatherings, were closed. Children were not permitted to loiter on the street, or congregate at any place. Children living in infected houses were not allowed to leave the premises. This rigid quarantine was very successful. No new cases were reported till the last week in December. One child came directly from the country with the disease, and two more were infected by a family in the country.

All school-rooms, churches, and houses, known to have had cases of scarlet fever, were thoroughly disinfected by men employed for that purpose, and under the instructions of the Health Board.

The quarantine was raised January 1, 1892, and only one new case has been reported since.

We feel that the disease is thoroughly under control, so far as the city is concerned; our only fear being, that it will be carried to us from the country, as the disease is widely spread throughout this and adjoining counties. The epidemic has been mild in the extreme. We have had about 75 cases in all, with but four deaths, all from the anginous form.

## REPORT OF DELEGATES

TO THE AMERICAN PUBLIC HEALTH ASSOCIATION MEETING, HELD AT KANSAS CITY,  
MO., OCTOBER 20 TO 23, 1891.

TOPEKA, November 1, 1891.

The recent meeting of this association was one of the most important in the history of the organization. The attendance was equal to the average. The papers presented and the discussions evoked were of a high order. The membership was considerably increased through accessions from Missouri and Kansas. The largely-increased delegation from Mexico attested the growing interest with which the objects of the association are regarded in that country. Canada, too, was ably, if not so numerous, represented.

Daily and evening sessions were held throughout, and the utmost good will and harmony characterized the distinguished assembly. The Governors of Missouri and Kansas honored the meeting with their presence, and both delivered addresses commendatory of the objects of the association.

The hospitality extended to the delegates was unbounded, including an excursion into Kansas by rail, a visit to the packing houses, a reception by the Commercial Club, of Kansas City, Mo., etc.

The thanks of the association were voted to Dr. E. R. Lewis, Health Officer of Kansas City, Mo., chairman of the local committee, for his indefatigable labors in connection with the meeting. It is seldom that such thanks are so worthily bestowed. To Doctor Lewis may be fairly accorded the honor of the successful outcome. Your delegates are under many obligations to him, as we feel sure are all the delegates.

Dr. Felix Formento, of New Orleans, was elected president; the other officers remain unchanged.

Doctor Jones, of the Kansas State Board of Health, was reelected to membership on the advisory council.

The City of Mexico was chosen for the place of next meeting.

The following more detailed account of the proceedings is submitted, but we have not attempted a record of the work of the association as outlined in the programme of the meeting, only presenting the main or leading features in a continuous record, without reference to particular sessions of the convention.

The association was called to order at 10 o'clock A.M. of October 20, 1891, and immediately proceeded to the reading and discussion of papers.

Dr. C. D. McDonald, of Kansas City, Mo., read a paper on "The Cause and Prevention of Infant Mortality."

He gave statistics showing that the infant mortality soon after birth was 20 per cent. One of the principal causes was the exposure to a low tem-

perature—a chilly room—soon after birth. He had been present when it was necessary to wear an overcoat in a room where a newly-born child was exposed to bathing. Forcing sleep by soothing syrups, to overcome the effects of this exposure, was another evil. Another trouble was the forcing of food—foreign substances, crackers, water, and whisky—into the young, inert stomach of the newly-born. He said:

I am opposed to all of them. There is no good in any of them outside the milk they contain. If Mother Nature intended anything better than milk to nourish the young babe, she would have put it in the mother's breasts. Your gruels, your barley waters, your corn starch and your beef teas—no starchy substance can be digested by the young babe. Starchy infant food is converted by the chemical processes of the stomach first into sugar, then alcohol, and then acetic acid. [“Why not give them acid at once, and be done with it?” was asked.] When Nature gets ready for starchy food she gives teeth. No sensible farmer would attempt to feed a calf hay. Hay is the natural food for a cow, as much as solid food is for a man. The mother who refused to nurse her child from selfish reasons deserved the censure of the community. Statistics show that in the first year the infant mortality, when the child is fed by artificial food, is 50 per cent. With natural food, the mortality is but 10 per cent. The best artificial food was pure cow's milk. Sterilization by chemical process was not thoroughly a success, because vital principles cannot be supplied by chemical processes, but sterilization was preferable to impure milk. Improper dressing—thin clothes—is also a prolific source of infant disease.

The paper received marked attention and caused general discussion.

Prof. W. W. Daniels, of Madison, Wis., thought that no one should be allowed to sell milk in cities unless he put his dairy establishment under the control of the sanitary authorities.

Doctor Reed declared that he had been struck, on coming through Missouri, with the great number of dirty ponds to which cows had access. “You can't expect pure milk from dirty water,” he said.

Dr. Joseph Sharp, professor of materia medica and therapeutics in the Kansas City Medical College, followed with a paper on “Glanders in Man.” The doctor classed glanders with acute infectious diseases, such as tuberculosis. The especial feature of the paper was a report of a case which occurred in Doctor Sharp's local practice, and in which he pointed out the difficulty of diagnosis in this obscure disease, and gave an outline of the methods of microscopic examination, together with the best methods of cultivating the bacilli of glanders. The paper recommended that, for preventing glanders, persons who came in contact with horses having open sores or discharges from the nose, should disinfect the hand with a solution containing a tablespoonful of equal parts of glycerine and carbolic acid in a quart of hot water, or 10 grains of corrosive sublimate in a quart of water. In his report of the fatal case which he treated, that of a painter who became inoculated through a sore on the hand while handling an afflicted horse, Doctor Sharp aroused much interest.

Dr. Paul Paquin, discussing this paper, told of a collection of 17 cases of glanders in man which he had collected in the State. As an instance of

the virulence of the poison, Doctor Paquin told of a man who, driving behind an affected horse, was struck in the eye by a particle of spray from the beast's nostrils, resulting in a case of glanders that developed rapidly and ended in the man's death.

Probably the most interesting, as it certainly was the most important, of the morning papers was that presented by Hon. Albert H. Horton, Chief Justice of the Supreme Court of Kansas, on "The Necessity of More Stringent Legislation to Repress Empiricism." It was a most scholarly production. In graceful and polished sentences, he scored the entire race of quacks with an unsparing hand. Judge Horton read as follows:

THE NECESSITY FOR MORE STRINGENT LEGISLATION TO REPRESS EMPIRICISM.

The forces which are silent and unseen are the most potent and creative. Thoughts are not thrown away, nor fancies squandered. Every enterprise or organization for the elevation or alleviation of mankind is the embodiment of many hopes and vague ambitions, gleaned by the careful economy of the mind, garnered, kept and shielded for the use and enrichment of future generations. To all comes pain; to a few has been given an intuition of pain; but to many, a desire to diffuse a general knowledge of its cause, and for its relief. Upon health, the happiness and prosperity of the world depend: the discoveries which increase its opportunities; the inventions which multiply its power; the attainments which deepen its wisdom; the accomplishment of all goodness and greatness; the joys of the heart, the lofty impulses of the soul. Health is the loving parent, the natural guardian, the tender nurse, the active promoter of all art, science, wealth, and religion. To preserve the health, to restrict and prevent disease, to disseminate sanitary knowledge, is the highest of missions, the noblest of aspirations. To commend the work of the American Public Health Association is to echo the voice of the people in hearty and earnest approval. Its labors, commenced 19 years ago, have been indefatigable, unceasing, and effectual. A resident of Kansas, I bear willing testimony to the good it has done, knowing from many sources the powerful and happy influence it wields over all of the States, also through Canada and Mexico. It has a broad field, an active membership, unlimited possibilities; and as its past records success, so is its future bright with the promise of glorious fulfillment. There is a vast and important work awaiting always its consideration, not least of which is the eradication of evils; and first, because the worst and boldest of these in most direct opposition to all advancement, to the spirit of progress and philanthropy, is empiricism or quackery.

Ages ago the Roman physicians marked their medicines with a small, greenish-colored stone, engraved about the rim from right to left. A charlatan of the fallen empire, finding one of these, went traveling about the country, administering vile decoctions upon which he had placed the seal of the learned to deceive the unsuspecting. Taken grievously sick himself, and in his delirium forgetting that he had prepared the liquid but recognizing the seal, he swallowed his own medicine, and died. The mountebank of the nineteenth century eschews all seals, and with brazen face and clarion voice travels the length and breadth of the land, calling himself "Diamond Dick,"<sup>1</sup> or some other equally euphonious or ambiguous title, as he asserts his skill and disposes of his wares. It might not be justifiable homicide to compel him to swallow his darksome nostrums, but the present laws are insufficient for his repression, and however beside himself he might become, we can hardly hope that he will so far forget his villainy as to administer unto himself that which he so

<sup>1</sup> "The old Indian doctor," "The Chinese herb physician."



recklessly deals out to others. Often, in Kansas, I have known one of these wandering quacks to visit various cities, advertise extravagantly his superior qualifications, stop a week or a month, take hundreds of dollars, benefit none, injure many, and then continue his travels—everywhere bringing disrespect upon the profession of medicine, as well as pecuniary loss. Many of these restless, wandering, ignorant quacks have no more knowledge of the practice of medicine or surgery than a so-called veterinary surgeon who resided in Osborne county, in my State. Upon a trial in the district court of his county, he testified that, after a close examination of some sheep, which were the subject of litigation and which were said to be diseased with “the scab,” he was certain of the character of the disease, because he had made a close examination with an instrument. Thereupon he was asked what instrument he had used in his examination. He answered, “A telescope.” The counsel was somewhat puzzled at this, and inquired of him if he was correct in his answer that he used a telescope. He said he was not sure whether it was a telescope or a telephone, but he used one or the other.

Pliny is accused of saying that “the Roman people got on for 600 years without doctors.” Americans could get on admirably *ad infinitum* without quacks.

There is a vein of superstition in the most practical. The mysterious, the wonderful and the unaccountable cures these pretenders boast of having made excite the credulous. Possible sufferers from chronic diseases, of which these men are prone to make a specialty, are induced to consult them, and finally to take their treatment. Their imaginations being worked upon, they are persuaded, during the brief stay of the vender in the town, that they are greatly benefited or permanently cured, and people of honest intentions, of wealth and influence, are frequently inveigled into giving testimonials to this effect. When they discover the utter dupes they have been, they find that, weeks before, the medicine man “folded his tent, like an Arab, and silently stole away.”

It were useless to pursue him; there is no law to reach him, and reputation is a word left out of his vocabulary.

An intelligent young man, who called upon one of these quacks in a Kansas town, was surprised by a proposition to travel with him and share the work and profits of the business. “But,” the young man said, “I have no knowledge of medicine.” “That makes no difference,” said the doctor; “you look pretty wise; all you need, to humbug the people, is a silk hat and a pair of spectacles.”

Empiricism is of ancient origin, and has its history. After the conquest of Greece by Alexander, centers of learning were formed and established in Pergamum and Alexandria. In the latter city, Erasistratus paved the way for the school of medicine known as the empiric. Serapion, a name distinguished in antiquity, and Glaucias, of Tarenton, are said to have traced the doctrine of empiricism back to Hippocrates, and are called its founders. The empirics would have nothing to do with anatomy. They argued that by this, and the rejection of cause, they gave closer and more accurate attention to “the actual phenomena of disease.” Experience they claimed as the basis of their practice. By this they meant observation, recorded observation, and judgment by analogy. Although among the ancients there were a few learned men belonging to the empiric school, its members were generally vain and pretentious, and so the name has been handed down to common and modern use, until it signifies to-day any pretender to medical or pharmaceutical knowledge and skill. In its oldest and best sense, empiricism referred to experience. It seems now to have been degraded into meaning experiment; and it is a barbarous and cruel wrong that in this enlightened age the ignorant and unskilled, but boastful, practitioner may go about unchallenged and unpunished, experimenting upon the sick, deceiving and entrapping the ignorant and the unwary. The

Romans had a complicated system which they considered medicine. It united mystery, superstition, and religion. The unconscionable and unprincipled empiric of to-day does not hesitate to fortify his position, which is at all times hazardous and uncertain, by the recountal of any awesome story calculated to excite the curiosity, or inspire faith in his vaunted ability.

A great man in his own estimation is the quack. The frequent repetition of his power and genius affects his brain (if he is so endowed), and he comes at last to believe in himself, as each day's substantial evidence of his influence over others adds to his wealth and increases his cupidity. Not infrequently he is nameless, homeless; his only inheritance vagrancy, coarse wit, and low buffoonery; his energies concentrated in his assurance. Warned by the omnipresent and uniformed son of Erin, like "Poor Joe," to "move on," he is compelled to cast about for the means of his migration. The glaring advertisements of some "Chinese herb doctor," or some similar quack, attract his wandering eyes, which are suddenly opened to the fortune awaiting him by turning to practical use his gift of song and dance, the general variety act, the coup de cunning of his kind. Obtaining a second-hand manicare set, he often commences his professional career as an itinerant chiropodist. As the shekels accumulate, he has a waking vision of coming greatness. He does not idly wait, but rather anticipates its arrival. He is fully persuaded that the term of his apprenticeship is over. He need no longer skulk along the alleys, peering through daylight chinks into forbidden gardens. "Old rags, old bottles, old iron," are words without import. From the tattered novel he has learned to decipher, he selects an appellation of distinction. He is satisfied that M. D. is a fitting ending. "Medicine is medicine," he says, "and one doctor is as good as another," and finally, armed and equipped with powders and compounds, he finds an advance agent in the person of a former pal, and with Quixotic zeal starts out on his more adventurous quest. At a corner of the public square, in some rural town, he mounts an improvised rostrum and begins his loud harangue. He is soon surrounded by a curious throng of willing listeners. "Now," he shouts, "if there is a deaf man in this crowd, let him come on and I will give him a free treatment." As there is a deaf man in every crowd, his patient soon appears. Crying in stentorian voice the efficacy of his so-called remedy, he drops a portion of it into the ear of his waiting victim. While the people laugh and jest and the din becomes uproarious, he suddenly proclaims to the man that he is cured. "Is it not so?" he calls. Half bewildered by the seeming enthusiasm around him, and influenced by the boldness of the assertion, and hearing distinctly a voice that would almost wake the dead, he believes for the moment that he is cured, and so affirms, amidst the applauding crowd, who, when they hear that the preparation not only cures the deaf, but any case of croup or cold, is good for sore throat, rheumatism, and sore eyes, will cure corns and mend picture frames, and is therefore an invaluable family remedy, press, crowd and mangle each other in their eagerness to secure a package before it is all gone. Frequently the aforesaid pal assumes the role of the deaf man, and thus becomes an accessory in the nefarious practice of his companion. The mountebank proper is often only a night in a town—having pressing and particular reasons for speeding onward—but during his brief stay he reaps a golden harvest, which amply rewards him for his tricks in trade, of which he has inexhaustible stores. I have especially cited the loud and most numerous specimen of the genus quack; but there is another, equally well known and still more damaging to the medical profession, because, while not so grotesque and glaring a travesty, his pretensions are as illy in keeping with his requirements. There is more tact and method and dignity, if the word applies, in the madness of the second pretender. He has, sometimes, had the advantage of the common school and the benefit of a name. Like the first, he is a great braggart,

but his praises come on printed hand-bills, which he puts into immediate circulation. He purports to come from one of the leading cities, where he claims to have a large and lucrative practice. He promises to cure any and every disease, and privately names his fee, which for a resident physician would be considered exorbitant. He claims it is much below his city price, and apologizes for its meagerness, saying that the figure is low because this is simply his "advertising trip." By a regular system of finesse and chicanery, he secures, during the third or fourth day of his stay, testimonials from prominent citizens of the cures he is said to have performed for them. He is afterwards rushed with calls at all hours of the day and night, and the money flows freely into his coffers, to the wanton aggrandizement of utter worthlessness and presumptuous arrogance. He writes no prescriptions, mixes his own ridiculous compounds, is entirely an unidentified and suspicious stranger, yet he supersedes the practice of the legitimate physician, and pockets in less than two months a sum considered a fair salary for a year; but, unlimited and unrestrained, he pursues his course, which is alike an imposition upon the people and ruinous to the medical profession. Then there is the resident quack, who may be found in every city. He sometimes claims to be a great specialist, but more often announces himself able to perform cures in every case and stage of disease. He is as thoroughly an impostor as the others, his knowledge is as superficial, his pretensions as bombastic. He becomes notorious by his constant and liberal advertisements. He is consulted from far and near. Though some lose all faith in him, there are many more upon whom he continues to practice his system of fraud and deceit. There are hundreds of gullible readers taken by his alluring promises in the daily papers; and so, to the general detriment, he contrives to keep and increase his patronage. Comparisons are said to be odious, yet here I would like to define the difference between the quack and the physician.

I recall with affectionate remembrance our family physician, upon whom from my earliest childhood I looked with youthful reverence and unquestioning faith. Before me, to-day, I see his kindly face and listen to his pleasant voice. He was a very hero, in my eyes; of commanding figure and magnificent physique. There could be no finer, braver, better man. He was the wise counselor, the skilled restorer, the sympathetic friend. The silver had crept into his hair, and careful thought and much exposure had lined his brow, but there was ever about him a brightness and cheeriness which seemed a part of his presence, only that it lingered after he had gone. I recollect that one of our neighbors went raving crazy, and with a gleaming razor menaced a crowd which gathered around him. But the doctor, alone, rushed dauntlessly forward, overpowered and unhanded him, exhibiting a physical courage and prowess sufficient to win the heart of any boy. Yet it was not this instance of fearlessness in time of danger which in my maturer judgment went furthest to prove his resolution and heroism. It was the tried and constant disregard of self, through the long years of a varied practice. No call was disregarded; no contagion appalled, no storm or tempest ever dismayed him. The humble and poor received his attentions in equal measure with the wealthy and influential. All of his life he went about doing good, ministering to the afflicted. His heart was in his work. His zeal, energy, patience, skill and industry combined in modeling the man fit for the highest ideal of life.

"A combination and a form indeed,  
Where every god did seem to set his seal,  
To give the world assurance of a man."

If not the powerful genius that my childish fancy pictured him, he was certainly a good and earnest man; and goodness and earnestness, it seems to me, are necessary essentials in the character of the family physician. His part in life is not a

mere by-play. He enters into its highest creations, its most thrilling scenes, its deepest stirring tragedies. As the river flows grandly to the sea, bearing upon its bosom the burdens committed to its care, turning the mill and fertilizing the valley, contributing to the peace and prosperity of its surroundings a strong and gladdening, but silent, influence, so should the life of the educated physician be directed, guarded, dutiful, conscientious. As from many hidden springs the river gathers strength and force, so should the deep principles of courage, generosity, truth, honor, humility, kindness and, above all, sincerity unite in forming the character of the physician. It should be his study to reject the bad, to accept and disseminate the good. So, ever by circuitous and difficult journeyings, his opportunities score his successes. Here the fruits of his labors gladden his vision, and there the flowers of gratitude spring brightly into his existence. The wounded healed, the sick restored to health, the dying soothed, the bereaved comforted, every trust held sacred, every family secret safe in the guarded sanctuary of his soul, ever seeking further knowledge, which, finding, he reveals, the good physician may feel the completeness of his life work. As the branches of the forest extend over the gleaming river, which joyfully mirrors their ceaseless congratulations, so ever above him the strong, kind hands of a relieved humanity reach out in warm and earnest grasp and sheltering benedictions. His duty well performed, his conscience clear, his faith kept, his mind is a happy and tranquil reflection. As from the bounteous arms of the trees, blossoms and leaflets fall quivering into the responsive heart of the river, so, from the grateful hands of the restored and healed, green laurels of acknowledgment, in words and looks, unnoted by the world, sink deeply in his heart of hearts, adding many gleams of pleasure to the life of the earnest toiler.

The courts of the various States of the Union have frequently announced the doctrine, that the Legislatures have ample power to prohibit quackery or empiricism.

The Supreme Court of my own State recently said, in the case of *State v. Creditor*, 44 Kas. 565, that "The power of the Legislature to regulate the practice of medicine, dentistry, or surgery, is undoubted; it is an exercise of the police power of the State for the protection of the health, and the promotion of the comfort and welfare of the people. It may provide that only those possessing skill, and learned in these professions, shall be permitted to practice; may prescribe the nature and extent, of the qualifications required, and the rules for ascertaining and determining whether those proposing to practice come up to the statutory standard. If the regulations and conditions are adopted in good faith, and they operate equally upon all who may desire to practice and who possess the required qualifications, and if they are adapted to the legislative purpose of promoting the health and welfare of the people by excluding from the practice those who are ignorant and incapable, then the fact that the conditions may be rigorous, impolitic, and unjust, will not render the legislation invalid."

Mr. Justice Field, of the United States Supreme Court, in delivering the opinion in *Dent v. West Virginia*, 129 U. S. 114, said, among other things, that "The power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations as in its judgment will secure or tend to secure them against the consequences of ignorance and incapacity, as well as of deception and fraud. As one means to this end, it has been the practice of different States, from time immemorial, to exact in many pursuits a certain degree of skill and learning, upon which the community may confidently rely, their possession being generally ascertained upon an examination of parties by competent persons, or inferred from a certificate to them in the form of a diploma or license from an institution established for instruction on the subjects, scientific and otherwise, with which such pursuits have to deal. . . .

"Few professions require more careful preparation by one who seeks to enter it than that of medicine. It has to deal with all those subtle and mysterious influences upon which health and life depend, and requires not only a knowledge of the properties of vegetable and mineral substances, but of the human body in all its complicated parts, and their relation to each other, as well as their influence upon the mind. The physician must be able to detect readily the presence of disease, and prescribe appropriate remedies for its removal. Every one may have occasion to consult him, but comparatively few can judge of the qualifications of learning and skill which he possesses. . . . No one has a right to practice medicine without having the necessary qualifications of learning and skill: and the statute only requires that whoever assumes, by offering to the community his services as a physician, that he possesses such learning and skill, shall present evidence of it by a certificate or license from a body designated by the State as competent to judge of his qualifications."

In *People v. Phippin*, the Supreme Court of Michigan, in 1888, decided that "There is no good reason why restraints should not be placed upon the practise of medicine as well as the law. The public are more directly interested in this than in the practice of the law, and persons who engage in this profession require a special education to qualify them to practise. A great majority of the public know little of the anatomy of the human system, or of the nature of the ills that human flesh is heir to, and there is no profession, no occupation or calling, where people may more easily or readily be imposed upon by charlatans. It is almost an everyday experience that people afflicted with disease will purchase and swallow all sorts of nostrums because some quack has recommended them. Up to the passage of the act in question, the people of this State were wholly unprotected against quackery, except such protection as the common law afforded. As early as 1806, the Supreme Court of New York affirmed a judgment against a physician, inflicting a fine on him of \$25 for practising medicine contrary to the provisions of an act of the Legislature." (37 N. W. Rep. 888.)

In *Eastman v. The State*, 109 Ind. 278, Chief Justice Elliott said: "The practice of medicine and surgery is a vocation that very nearly concerns the comfort, health and life of every person in the land. Physicians and surgeons have committed to their care the most important interests, and it is an almost imperious necessity that only persons possessing skill and knowledge should be permitted to practise medicine and surgery. For centuries the law has required physicians to possess and exercise skill and learning, for it has mulcted in damages those who pretend to be physicians and surgeons, but have neither learning nor skill. It is, therefore, no new principle of law that is asserted by our statute; but, if it were, it would not condemn the statute, for the statute is an exercise of the police power inherent in the State. It is, no one can doubt, of high importance to the community that health, limb and life should not be left to the treatment of ignorant pretenders and charlatans. It is within the power of the Legislature to enact such laws as will protect the people from ignorant pretenders, and secure them the services of reputable, skilled and learned men, although it is not within the power of the Legislature to discriminate in favor of any particular school of medicine. When intelligent and educated men differ in their theories, the Legislature has no power to condemn the one or approve the other, but it may require learning and skill in the school of medicine which the physician professes to practise."

In *State ex rel. Powell v. The State Medical Examining Board*, 32 Minn. 324, the Supreme Court of Minnesota decided that "The Legislature has surely the same power to require, as a condition of the right to practise this profession, that the practitioner shall be possessed of the qualifications of honor and a good moral

character, as it has to require that he shall be learned in the profession. It cannot be doubted that the Legislature has authority, in the exercise of its police power, to make such reasonable requirements as may be calculated to bar from admission to this profession dishonorable men, whose principles or practices are such as to render them unfit to be entrusted with the discharge of its duties. And as the duty of determining upon these qualifications, both as to learning and skill, and as to honor and moral fitness, must from necessity be committed to some person or body other than the Legislature, we see no reason why it may not be committed to the legally constituted body of men, learned in this profession, named in this act. . . . In the profession of medicine, as in that of the law, so great is the necessity for special qualification in the practitioner, and so injurious the consequences likely to result from a want of it, that the power of the Legislature to prescribe such reasonable conditions as are calculated to exclude from the profession those who are unfitted to discharge its duties cannot be doubted."

The decisions of various other States might be cited, if time permitted, in support of the views herein expressed. I have quoted, however, sufficiently from the highest judicial tribunals of the country to establish the doctrine that when the medical profession, the Boards of Health, or any other fraternity or association, demand the enactment of severe and effectual measures by the Legislatures of the various States to repress and punish empiricism, they have a strong legal foundation upon which to work and build. They are not asking for doubtful or questionable legislation, but only such as has been approved by the ablest judicial officials of the nation.

Attempts have been made in Kansas, and in several other States of the Union, to prevent, by legislation, the practice of medicine by empirics, but thus far these laws have generally been too loosely framed to be effective or valuable. The necessity for more stringent legislation in this matter is apparent. If the tramp, who simply refuses to work, but begs his bread, may be punished by imprisonment in the city or county jail, more certainly should the medical tramp, ignorant and unskilled, who imposes upon and defrauds the people, be subjected to the law's severest penalties. To protect the public, the American Public Health Association should recommend the enactment of statutes excluding from the medical profession those who are not competent, by learning, skill, and experience, to practice, and punishing, by imprisonment, all who violate its provisions. No one should be permitted to practice medicine or engage in surgery unless authorized so to do by a competent board of Government or State examiners, appointed under authority of law. A mere diploma should not be sufficient to authorize the holder to practice any profession. In the law, the diploma of a law school is some evidence of the learning of the holder, but, as a general rule, not conclusive. So, the diploma of a physician or surgeon ought not to be conclusive of his learning or skill. A further and more thorough examination should be had, under the authority of the Government or State, before any physician is permitted to engage in practice. I am aware there are many difficulties in the way of obtaining effective legislation upon the subject discussed. The quacks themselves, who are numerous, and who occasionally are found in the Legislatures, will, out of self-interest, oppose the adoption of any sufficient statute. Then again, the people themselves need education upon this subject. They are slow to act, even in their own interest, but energy and perseverance will accomplish great results. The work along the line proposed should be renewed, and be even more active than in the past. Something more may be accomplished than has already been done. In any event, beneficial results will be obtained.

In the divine creation of medical science there is no niche or corner for the quack. In modern paintings, one main action, one point of view and one instant of time

are required. In sculpture, the ancient Egyptians disregarded all these rules, and, as their religion forbade them to follow nature in the human form, their copies were restricted and incongruous. To the medical body, the quack is a disproportioned, ill-formed and superfluous limb. The arm of the law should restrain him from seeking to unite himself with that which he is unfitted to approach. He is not only a plain disfigurement, but a strange and unnatural incumbrance, which it is the duty of the body politic, for its own health, to remove. Yet, not only in its own behalf would I urge this expedient, but for the broader and more comprehensive cause of right and justice in the interest of all humanity.

As the medical fraternity has been compelled to bear the ridicule, to feel the ignominy, and share the burden and the loss which have been brought upon it by the empiric, so should it be the special work of the members of that fraternity belonging to this association, as the mountains part the clouds, and as the continents divide the seas, to erect impassable barriers which shall forever separate from them this disgraceful humiliation.

In Catholic countries, wherever a murder is known to have been committed, a cross is erected, the ever-touching symbol of unmerited suffering. As, in the life of the well-meaning and ordinary individual, the years are frequently compared to milestones, so it seems to me that all along the roadway of him who, under the guise of competency and qualification, pretends to alleviate the distress of others, but really adds to their pain, prolongs their agony, or causes their untimely death, the white cross rises in speechless condemnation. The rocks and the innumerable pebbles which mark his path assume this form, and all give silent evidence against him. Shall the medical members of this association, noticing this convincing and irrefutable testimony, remain inert? Shall they become willing accomplices to the criminal, his equal associates and confederates? As theirs is the joy of fanning into life the flickering flame, of soothing and ameliorating, of calming, upbuilding, and restoring; as theirs has been the honest study, the long research, the willing devotion, and the conscientious toil, so be it theirs for all mankind, in the interest of a consecrated cause, to extirpate such enemies and expel such foes.

Allen Hazen, Esq., C. E., of Lawrence, Mass., read a paper on "Water Supply and Public Health."

Mr. Hazen's paper was technical in its phraseology, and dwelt principally upon the typhoid fever and cholera germs which infect impure water. Typhoid fever and cholera bacteria are taken into the system through food and drink. Pure water is therefore a necessity. If water is absolutely free from sewage it can be depended upon as being comparatively pure, although many waters, not polluted by sewage, have been known to breed disease. Flowing streams will partially purify themselves. Reservoirs and long channels where water flows and becomes aerated, will not always purify it. Some system of filtration is therefore imperative, and the question to be decided is the best means of filtration. Several systems were described, but all were said to be more or less defective.

Dr. Paul Paquin, D. V. S., of Columbia, Mo., a member of the faculty of the State University, followed, with a paper on "Vaccine and Vaccination."

He spoke of the necessity for absolutely pure vaccine virus. He said that virus should never contain any foreign substances whatever. He graded

virus as absolutely pure, fairly pure, and dangerous, cystic or very dangerous, as the result of elaborate microscopic investigation. He spoke of the difficulty of procuring it absolutely pure. Contamination with harmless germs did no harm to the patient.

Doctor Yeaza, of Mexico, took up the discussion, and delivered one of the most interesting talks of the session. He said that in Mexico it had been found by experience that humanized virus is much preferable for use in inoculating people. The whole question of the collection and culture of the virus, and the employment of it, is under the direct control of the General Government. There are doctors whose entire time is devoted to this matter of vaccination. A serious small-pox epidemic has not visited that country in about 25 years. Children are required to present themselves at stated periods for vaccination. The healthiest subjects are alone chosen for the culture of the virus, and the result has been to drive small-pox epidemics from the land. He thought that everything depends upon the intelligent method employed by the physician in using it, and is satisfied that its proper handling need cause no trouble to the patient or any friends. The address was closely attended and heartily applauded. The evident knowledge of the Mexican physician of the subject under discussion caused much favorable comment.

The discussion that followed was largely upon the advisability of compelling manufacturers of vaccine virus to register their products.

Dr. Charles N. Hewitt, of Red Wing, Minn., spoke of unfavorable results from using bad vaccine in his State, and of the difficulty in obtaining good, and gave his personal experience. Small-pox, he said, was the same that it always was. An epidemic might sweep the country now, as it is practically unprotected.

Doctor Salomon, of New Orleans, replied that in Louisiana each child must show a vaccination certificate before being allowed to attend school. About 90 per cent. of the primary vaccinations, and a great part of the secondary vaccinations, were successful. He favored the use of bovine virus.

The evening of the first day's session was given over to ceremonial proceedings at the Auditorium.

On the stage were the officers of the convention, Governors Humphrey and Francis, the Mexican delegation, and many distinguished guests. The audience was large and appreciative, comprising many ladies.

Gov. David R. Francis, of Missouri, came forward, amidst the applause of the assembly, and delivered the following address:

An association which sprang from a desire to benefit humanity, and has for 20 years been maintained by scientific philanthropists for the purpose of checking disease, alleviating suffering, and promoting sanitation, is worthy the support of all good citizens, and challenges the admiration of thinking men the world over. The American Public Health Association honors Missouri by its presence, and I am here in my official capacity as chief executive of this commonwealth, not only to greet



you with that warmth of welcome that characterizes Western hospitality, but to manifest and emphasize, by act and word, the deep interest our people feel in the laudable work in which you are engaged.

The march of civilization is being constantly marked by new discoveries in science, and by practical application their value is tested. We live much more than our forefathers did. Better a decade in this age than half a century in the darkness of the middle ages. In our three score years and ten we live longer than did Methuselah through all his centuries, but our life is none the less precious. Rather do we cling to it the more tenaciously. Its increased advantages bring multiplied opportunities and additional obligations. Economic and social problems have become political issues. The age is intensely practical, but is constantly growing less selfish. A broader humanity is daily taking deeper root in the hearts of men. We of America, having driven back the savage, cleared the forest, defined our possessions, and assumed our position among the nations of the earth, can turn our attention to the development of our resources, but cannot afford to overlook the social and sanitary condition of our people, if we would maintain that eminence and power which we have attained. The church recognizes that its offices must not be confined to directing its votaries to mere professions of belief; men will no longer be reconciled to the afflictions, hardships, inequalities and oppression of life by promises of equality and happiness in eternity. Church and state and society, enlightened, progressive, philanthropic, and practical, are all working to a common end—the elevation of man. The church, whilst not losing sight of his spiritual welfare, is endeavoring to help him to a better social order now and here; the State, whilst protecting life and property, is extending its authority to the aid of the weak by enforcing recognition of the rights of humanity, in order that oppression and defiance and desperation may not eventuate in the downfall of the governmental fabric and the reign of anarchy. Society, or civilization, or progress, imbued with moral convictions and impelled by practical ideas, is in the van of both church and state, battling against superstition and indifference, for the betterment of the moral, intellectual and physical condition of man.

You who have assembled here, for the purpose of giving to each other and to the world the results of your labor and research for better sanitation and the prevention of disease, are leaders in the great contest, and the state and humanity acknowledge obligation to you for scientific applications and discoveries.

There is a class of citizens, of eminent respectability it may be, as they are not pensioners and do not oppress or transgress on the rights of their fellows, and bear their share of the public burthens in the shape of taxes that they cannot evade, but who consider their entire duty done when that much is accomplished. A community of such men would be an association of drones; a State composed of such citizens would lapse into barbarism. They are found in every city, town, and hamlet, but happily they are in the minority in this age and locality. They enjoy and accept, with an air of meritorious proprietorship, the "unearned increment" that results from the toil and enterprise of others, whom they, in their professing conservatism, call speculative, ambitious, reckless. They have not the acumen to appreciate the value of an intelligent public spirit, their souls are too narrow to be moved by benevolent impulses, and their selfishness too absorbing to admit of beneficent acts. They live out the lease of life allotted them, their departure creates no void in the community, they pass away unwept and unhonored, and the world is no better for their having lived. Such men fail to comprehend the benefit of your work, and may look upon your efforts as valueless theories; but the observing student of history and the far-seeing, practical man of affairs can see the beneficent results of your discoveries in every civilized country on the globe.

In addition to its moral grandeur, this sanitary work has a material value almost incomprehensible, and certainly incalculable. If labor is the basis of all value, every human life must possess its proportionate worth. The great falling off in the death rate and the decided decrease in epidemics are attributable to the better sanitary regulations, adopted after urgent solicitations from yourselves and your scientific colleagues or predecessors. The prevention of epidemics can best be appreciated by a community that has been visited by one. The loss is inestimable. Immigration ceases, capital is alarmed, and improvements are unknown. Time, and a long period of time, is required to restore confidence and quiet fear of a recurrence. But it is not necessary to demonstrate or recall the importance of your mission. Look at the individual estimate of life. Every rational being makes it second to honor alone. The State has wisely and rightfully assumed the authority to enact sanitary regulations and enforce their observance. The true province of government is not transcended, nor is the liberty of the citizen violated, when all are required to obey laws which conduce to the promotion of public health. The city or the State which adopts and enforces with firmness and impartiality the strictest sanitary regulations not only enhances its material interests, but adds a charm to the attractions of home, and inspires its children with a more devoted patriotism.

Gentlemen of the American Public Health Association, scientists and philanthropists who have assembled here in this great Missouri valley in the pursuit of your high calling, Missouri recognizes in you representatives of the most advanced thought of the times, and the highest type of citizenship, and salutes you as public benefactors. May your deliberations prove so abundantly successful as to inspire you with renewed zeal and redoubled efficiency in the noble work in which you are engaged.

After the applause following this address had ceased, Gov. Lyman U. Humphrey, of Kansas, was introduced, and was warmly greeted, as he advanced to the platform. He opened his remarks with the story of an experience he had, with two or three Kansas officials, about a year ago, in a little town in southwestern Kansas. The Governor stated that they were en route from the capital to a point down in the southwest on State business. As they arrived in the country town referred to, a delegation of citizens met them at the depot and insisted that they stay over a few hours and attend a county agricultural fair. They complied, and visited the fair. When the Governor arrived upon the grounds a speech was demanded, but, before it was delivered, a scrub horse-race was run. The Governor then spoke, and his speech was followed by a colored minstrel performance, after which the accompanying officials spoke. When he got ready to leave he informed the people that it was the first time he had ever been sandwiched between a scrub horse-race and a colored minstrel show.

Continuing, Governor Humphrey said that he could add very little to the words spoken by Governor Francis. He said he knew but little of the work of the association. He understood in a general way that the association was about 20 years of age—not quite old enough to vote, in this country—and that its membership is composed of distinguished gentlemen taken mainly from the professions. He said:

"I came here without having a speech with me for the occasion; but I am glad to be here, and pleased to have the opportunity to meet you, and, on behalf of Kansas,

extend to the visitors from far-away places a cordial welcome and a hearty greeting to this section of our glorious country. I suppose the most difficult work this body has to do is to educate the public, and I believe it will be no extravagance for me to say that your organization is a patriotic one. One of the first provisions of the constitution of our country is for the promotion of the general welfare of the people, and, as I understand it, that is what you are trying to do. Therefore, I say, you are patriotic. It is absolutely unselfish patriotism. The question of sanitation will always be an important one, and I am sorry to say the Legislatures of my own State have been too indifferent to its importance. Not being familiar with your association, or any of the topics to be discussed, I will not attempt to say anything on a subject of which I know so little. My own ignorance of the work, however, is a moral that plainly points to the necessity for the organization.

"I hope that when you go away from your deliberations you will carry with you pleasant remembrances of your visit to this great and growing city and the hospitality of its people."

Applause followed Governor Humphrey's remarks, after which, Hon. John L. Peak, in behalf of Mayor Holmes, unavoidably absent, delivered a very eloquent and witty address of welcome to the city.

President Montizambert was then brought forward, and delivered his annual address, as follows:

In the offering of his annual address to a public gathering such as this, the president of the American Public Health Association has, it seems to me, a two-fold duty to perform. This follows, naturally, from the two-fold nature of his audience. He has, in the first place, to speak to those who are strangers to the association, and to endeavor to interest them by some idea of its scope and powers and its workings. In the second place, it may well be expected by the members of the association that some reference, however brief, should be made to the paths along which progress has been made since the last annual meeting, and some brief review given to the conclusions of scientific research, and of experimental investigation on those subjects which affect them more closely.

"The objects of this association shall be the advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene." That is the definition of our constitution. An "acknowledged interest in, or devotion to, sanitary studies and allied sciences, and to the practical application of the same." That is the qualification for submission of a name for admission, and that alone.

This, then, is an association which is not confined either in theory or practice to the medical profession. And this fact we are glad to take occasion, from time to time, to bring prominently before the public. Anyone is welcome to our ranks who takes an interest in the grand objects of the prevention of disease, and the raising of the standard of the people's health. And this, whether it be by the larger organizations of the nation, the State, and the community, or by the hygiene of the house and the home—that hygiene of the dwelling and of the individual which must be the foundation stone of all sanitary work, and which is of such paramount importance to the moral and physical well-being of the community.

Our meetings are held at different places from year to year, and in this way the association has already been in touch with a large portion of the continent. Our coming is heralded and our proceedings are reported from day to day by the newspapers of the country. Our hope is—and it is a hope amply justified by past years of experience—that the association thus enlarges the sphere of its useful-

ness. That our hands are strengthened and borne up of those who are already fighting the battle for sanitary progress in that neighborhood, and that when the echoes of our deliberations fall on the ears of those who have heretofore neglected these matters, from thoughtlessness rather than from willfulness, they may be warmed and stimulated into sympathizers and earnest fellow-workers, each head of a family and each individual becoming, in a measure, a sanitary officer for his immediate home and surroundings, and taking for the future an intelligent interest in the development of sanitary progress and reform in his city, village, or district.

Last year we met in a sea-coast city, and quarantine—the prevention of disease from without getting into the country—came prominently under consideration. This year, we meet in an inland city, and health organizations to prevent disease, and to deal with disease that has got in, seem naturally to invite the greater attention.

There are two main strings to a sanitary bow: a system of maritime sanitation at the ports of entry, and a system of prevention and preparedness in the interior communities. Neither is sufficient without the other. The interior communities, throughout the length and breadth of the continent, have an interest, and a very close and vital interest, in the fittings and workings of the quarantine service at the various ports. But confidence in a quarantine service, however perfected, should never be allowed to lull us into a false sense of security, to the neglect of ever striving more and more towards the sanitary improvement of the big cities, villages and districts in which we live.

From a long period of incubation of some of the infectious diseases, and the relative shortness of the voyage from many ports outside the country, and from the possibility of disease lurking in imported clothing and effects, it is evident that unless there could be a routine quarantine detention of all vessels arriving at every port, and a routine disinfection of all clothing and merchandise from abroad, there is always a possibility of exotic disease passing the quarantine barriers in an invisible and unrecognizable stage and condition, and first declaring itself in the interior of the country. This cannot be avoided without the detention of vessels, passengers and merchandise at the ports of arrival, and such consequent interference with trade and commerce as would be quite unjustifiable and impracticable.

Quarantines may be held accountable for dealing with actual cases of infectious diseases, with infected vessels and effects, and those suspected of being infected. In this way they strain out and protect the country from a very large percentage indeed of the exotic disease which threatens it from time to time; but they must not be expected to do the impossible, nor must they be lenned on as an excuse for lessened effort inland. Occasionally cases of infectious disease in the stage of incubation, and the micro-organisms of disease lurking in unsuspected clothing or merchandise, may from time to time pass the most efficient quarantine practicable or possible. An outbreak may thus occur in some inland locality. Then at once comes in the value of the national, the State and the local Boards of Health, with an organized system of notification and isolation, to limit, to confine and to stamp out the disease.

Coast quarantine and inland health organizations form, then, our double line of defense; or, to borrow an illustration from the game of cricket, the coast quarantine is the wicket keeper and the health board is the long-stop.

But it is not only with regard to the relatively infrequent advent of disease from abroad that the results of our inland health work are to be looked for. There are elements of disease within always, and it is in the daily combat with these that the sanitary worker finds scope for his most earnest efforts.

To the medical men of this vicinity the meeting here of this association is meant

in part as an appeal to quicken your interest in the more purely preventive work of our profession, to increase your interest in the organization and working of the coast quarantines and health boards by which you are affected; the sewerage of your cities; the disposal of garbage and refuse; the purity of your water supply; the infectious diseases of animals now known to be closely related to those of man, as well as other much broader questions of modern sanitation.

To the non-medical of all ages, sexes, and conditions, it is an appeal to take a lively and an active part in the great crusade against dirt and disease. As in times of invasion every loyal citizen is ready to take up arms against a common enemy in defense of a common liberty, so should every one make war against the common enemy of mankind which comes to attack the health. In the words of Sir Spencer Wells, "instruct your mayor and corporation, your clergy, and your own household, that every case of typhoid fever or scarlatina, of diphtheria or small-pox, of measles or whooping-cough, can no longer be looked upon as natural and providential; but that the existence of such preventable diseases is a proof of ignorance and negligence, and a disgrace to the country, the town, and the family."

Disregard of the laws of health arises, not so much from antagonistic views in relation to proper sanitation, as from our tendency to undervalue the homely little facts and little opportunities of every-day life. As it has been well said, "If every individual in a city appreciated the fact that he is, to some extent, responsible for the condition of public health, and in order to keep his conscience clear kept his back yard and alley clean, the reports of the Commissioner of Public Health would show the result of the multiplied effort."

Every one can do a little, if only to make one home or one room bright, more cleanly, and more wholesome. Sunlight, pure air and thorough cleanliness are natural enemies to disease germs. These cannot live where they have not their proper food, which is found in dampness, darkness, mould, and dirt. The experiments of Koch, Ransome and others prove that the living germs of consumption, when exposed to the sunlight, lose their vitality in a few hours, or even in a few minutes, if the layer in which they are exposed be thin enough, and that even ordinary daylight, if it last long enough, will have a similar effect. There is no sounder philosophy than the old saying, that "There is more health in a sunbeam than in drugs, more life in pure air than in physician's skill;" and that "Sunlight may fade your carpets, but better that than have its absence fade your cheeks."

Every one can do a little, if only a helping word or a little act; for indeed the aggregate of those words and acts may help to increase the health and happiness of your homes and communities more than you may well realize, both directly by their influence on your surroundings, and indirectly by your encouragement of those who are officially charged with your well-being.

Do not, then, on the one hand, withhold the kindly word of appreciation when occasion offers, and on the other hand, as a worker, be not discouraged if much of your best work seems to go unrecognized and unthought of. The greatest, many times the only, reward of the sanitarian is to be found in the consciousness of good work well done.

After referring briefly to members of the association who died during the past year, the president discussed Asiatic cholera, and the effects of experiments reported by a surgeon in the United States marine hospital service. Referring to the la grippe epidemic, he said we had advanced but little from last year. He also spoke of cancerous diseases, and referred to a number of experiments that have been made during the year for the relief or cure.

He referred briefly to Koch's famous lymph, which proved a failure after having excited the whole world for a time. He also referred to diphtheria and other infectious diseases, and spoke of various ways of disinfecting.

The exercises closed with music by the Third Regiment (Missouri militia) band.

The following day, Dr. Robert Gayol, civil engineer, of the City of Mexico, read a paper upon the proposed sewerage system of his city. He declared it was his first attempt at addressing an audience in English, but he managed to get through it exceedingly well.

The paper, emanating as it did from so important an officer as the city engineer himself, and treating on a subject of such vast interest as it embodied, a subject which has been battled with in engineering circles for the past decade, was especially interesting, and its importance enhanced, in the present instance, by reason of the fact that the government of Mexico is adopting the plan set forth in the paper.

Preparatory to presenting his paper, the better to illustrate his theories, there was distributed among the members of the association a set of maps illustrating the topographical situation of the City of Mexico, and the proposed location of sewer mains. In the presentation of his paper, Dr. Gayol was most thorough in details. In the paper, it was shown that the City of Mexico is situated at the foot of a group of mountains, where it is impossible to obtain an outlet for the vast accumulation of garbage, save by a lake, one of a group of three, some six miles distant from the city. And not only was the city confronted with terrible epidemics, as a result of ill drainage, but frequent floods resulted from tremendous rain storms, at which times a fall of one inch in an hour has been recorded.

Bounded and overtopped on three sides by mountains, on the remaining boundary there exists a depression which only arises to a height of 200 feet above the level of the city, and it is in this depression that three lakes exist, all of which are very deep, and the lowest of which is Lake Texocco. It is into this lake that the City of Mexico transfers its garbage by a small and entirely inadequate system of sewers. Once reaching the lake, the refuse was allowed to remain, as there was no means of draining the lake, owing to its topographical situation. This plan of carrying the sewage into Lake Texocco remained in practice until recently, with no definite action ever having been taken to adopt other plans of drainage, owing to political and other influences. But an alarming catastrophe of late presented itself in the gradual filling up of the lake, until to-day the bottom is only six feet below the level of the sewers of the city, and this gradual rising of the bottom of the lake simply means that within a few years it will reach the level of the city, and thus effectively shut off the current necessary to carry the sewage away.

Two years ago, Engineer Gayol was instructed to prepare plans for a sewage system, and this demand on the engineer resulted in the adoption of

a main drainage system, which proposes the cutting of a canal 30 miles in length, and of a tunnel six miles long. Work on this project is being pushed at a rapid rate, 8,000,000 cubic feet of dirt a month being taken from the canal, and the tunnel is being driven through at the rate of 600 feet a month. At this rate, it is estimated the work will be completed within three years, and result in the drainage of Lake Texoco.

Gathered from the data given, it was shown that economy was followed everywhere without interfering with the satisfactory working of the system. The sewers are to be flushed every day by water, from two of the three lakes mentioned, to the full capacity of the pipes, which will be 66,000 cubic feet of drainage a minute, with a velocity of two feet per second—this rate of speed being essential in order to carry off the solids which are deposited on the bottom of all city sewers.

One very important point involved in the construction of this Mexican sewage system, is the absence of catch-basins, and as a reason for the abandonment of this common feature in all American systems, Mr. Gayol advances the theory that a catch-basin in Mexico would simply mean a hiding place for decomposing matter, as there would be no rain to cleanse them for nearly six months in the year. Instead of the catch-basin, Mr. Gayol proposes a movable catch-box of so small size as to admit of being hauled up and dumped into a cart by the city scavengers.

"The Disposal of Garbage," by Prof. De Dos Fall, chairman of the committee appointed by the association to investigate this very important question, next claimed the attention of the meeting.

In this paper, the professor showed an inclination toward cremating the refuse, with a compromise on the Metz system, which, by treatment in a furnace, renders the organic garbage into a fertilizer and utilizes the inorganic substances for filling vacant lands. The result of a number of inquiries, directed to the secretaries of the Boards of Health of a number of cities, showed a vexed state of affairs to exist pretty much all around; dumps prevailing in inland cities, and immersion in the sea and lakes being followed on water-front cities.

He was followed by Dr. Edward Clark, who spoke in line with the professor as to the preference of the Metz cremation system over all others. He pointed out the evils incident to allowing refuse matter to be left long to "smell to heaven," and attributed much of the complaint about the present methods of handling garbage to the use of improper wagons. The public naturally objects to disagreeable sights, and there is no question about most of the wagons used for such purposes being unsightly. In Buffalo, the speaker's home, the carts are kept clean and the garbage closely covered. One reason Mr. Clark advanced why garbage was such a nuisance, was because it was allowed to be dumped on the premises and there left until badly decomposed. He advocated that in the business portion of the city all garbage should be removed every day, and in the residence portion two or three

times per week. Such removal should only be made at night, or in the early morning before people are astir.

Col. W. F. Morse, of New York, followed with a paper treating of another phase of this same subject. He vigorously opposed the contract system of disposing of garbage, arguing that it was never a satisfactory service, and resulted in unclean alleys and unhealthy sink holes in the city. He favored the cities doing their own work, as the only way efficient service could be secured. The item of expense was greater, perhaps, but the men and teams could be employed to advantage on other public work, and thus overcome all such objections. Garbage, Colonel Morse thought, should be subject to rules and regulations and measured for disposal. He described how carts can be unloaded by steam without exposing their contents to a sensitive public. In our cities the expenditures for maintaining the public health are disgracefully small, and this question, with all its importance, receives practically no attention.

A paper describing the crematories in Southampton, Eng., by Dr. Randall Herring, was read by Dr. Crosby Gray, of Pittsburg, Pa. He described the system used there in detail, and extolled it as being the best he had seen. It possesses the peculiar advantage of allowing the city to realize on garbage, and not only disposes of all refuse matter satisfactorily, but enables a revenue to be derived as well.

The evening session, second day, was opened with a paper on "Rabies," by Assistant Surgeon J. J. Kinyoun, United States marine hospital service. The doctor had been engaged in investigating this disease in Europe.

The disease is transmitted almost wholly by the canine and feline species. It prevails all over the world, except in Australia, where it is unknown.

He regretted that so little is known of its prevalence and that so little report is made. The best source of information seems to be the public press. He opposed the idea that the disease is confined to warm weather, the statistics showing that the greater number of cases occur in December and May. The disease rarely appears later than six months after inoculation.

He stated that the medical fraternity may as well begin treating it as a disease, as it is nothing else. He spoke of the Pasteur treatment, and the success that eminent specialist had experienced.

Saliva becomes virulent two or three days before any symptoms appear. Recognition of the disease is not easy in any animal in the early stages. He advocated the establishment and enforcement of strict quarantine regulations, in order to eradicate this terrible disease.

The next paper was by Dr. P. C. Remondino, of San Diego, Cal., on "American Climates and their Physical Effects."

He said that it is well known that European immigrants soon lose their ruddy cheeks and bright eyes, with a certain loss of spirit. He went into



his subject without gloves, saying that there was less of climatic influence than hot air, poor ventilation, too much indoor life, and lack of exercise. He says the American people live in happy disregard of all hygiene or science.

The same style of architecture is to be observed in every section of the United States, no matter what the conditions of the climate may be.

Another evil was in the matter of dressing, and the diet of the various sections, which were very little different one part from another. Although the people of America almost totally disregard all hygienic laws, he said they were the happiest and most contented in the world.

The paper caused Doctor Remondino to be subjected to considerable good-natured chaffing, until Doctor Yesi, of Mexico, called the attention of the association to the fact that they were wandering from the subject. He made a very interesting address, saying he had treated typhoid fever in Philadelphia and in Mexico. While in the former city the terrible nature of the disease is well known, in the latter, owing to the altitude of 6,000 feet, and the rarified air, it is mere child's play.

"Animal Diseases," by Mr. Ernest L. Dundas, United States Veterinary Inspector of the Kansas City packing houses, furnished the next subject for discussion.

Mr. Dundas spoke strongly against the evil of diseased cattle being shipped to market. "As soon," said Mr. Dundas, "as a farmer discovers that tuberculosis is about to ravage his cows, he immediately ships them off to market to get rid of them before they die on his hands." He thought the Jerseys were more afflicted with the disease than any other breed, and thought bad breeding had a great deal to do with it. He said he was satisfied that the department would do everything possible to prevent the disease.

At the termination of his remarks, which were very brief, Doctor Green, of Buffalo, said that, while it might not be incorrect that the disease was quite common and deserved close watching, still the fact should only urge the physician to more earnestly fight against the spread of disease among his human patients.

Other gentlemen thought Doctor Dundas mistaken in the statement that the disease was more prevalent with Jersey cattle.

Doctor Dundas said it had been proved by statistics that tuberculosis was most prevalent among Jersey cattle, and that he had also observed it in his own experience.

Doctor Salomon, of New Orleans, inquired of Doctor Dundas the method adopted by the Government in the inspection of meat, and asked how they arrived at a conclusion whether or not a beef was diseased by tuberculosis. Doctor Dundas answered that the Government required him and all his inspectors to keep the mode and details of the inspection a secret, but if the gentlemen present wished to witness an inspection, he would be glad to show them how it was done, if they would visit the packing houses.

This paper was productive of much discussion, and Dr Peter Brice, of Toronto, made a speech which provoked much applause. His remarks were limited to tuberculosis in milk, through which the disease is most commonly transmitted. Dr. Brice stated that no milch cow should ever be bred, as it was a granted fact that tuberculosis was attributable to breeding. "In Canada," said he, "we never breed our milch cows, and in one city of great importance, we never use a milch cow after she once goes dry; she is immediately sent to the butcher. The great question before us now," the doctor continued, "is how to tell a cow when she is so afflicted. It seems to me that in view of the startling figures that there are 15,000,000 cows daily supplying the country with milk, and the fact that in certain abattoirs it has been shown that 5 to 10 per cent. of the cattle killed are tuberculists, there should be a most rigid and regular inspection of all milch cows, as a duty to the public."

An interesting paper was presented on the "New Organization of the Supreme Board of Health of Mexico," by Dr. Domingo Orvananos, of the City of Mexico, read by an interpreter. The paper gave a brief account of the present organization of the board. Continued revolutions in the Mexican republic up to the year 1867 had prevented any reform movement in sanitary matters.

President Diaz, says the author of the paper, is greatly interested in everything pertaining to sanitation, and during his visit to this country and Europe, in 1882, he had with him a prominent Mexican physician, who made notes of all matters of interest relating to sanitary laws.

The outline of work covered by the Mexican Supreme Board of Health was given, showing a most complete system of supervision—a system which, on its face, would tend to make it one of the most thorough in operation in any country. One exceedingly good feature of the code is the sending of a surgeon physician with every ship leaving Mexican ports, who is held responsible for the sanitary condition of the vessel, and obliged to report to the Mexican consul at every port where the vessel may touch, and obtain from him a clean bill of health. This move, the Doctor added, was taken in view of the fact that Mexico is preparing to meet the reciprocal treaties of all countries, thus calling for the service of an extensive maritime navy.

The reading of this paper led to a warm indorsement of appreciation of so efficient a system, raising the question of the ability of the United States Government to adopt any such grand and sweeping system, owing to the question of States rights, which would necessarily be interfered with in the enforcement of certain provisions of inland quarantine and inspection. A half-dozen gentlemen rose to thank Doctor Orvananos for his paper, as the source of much valuable information to those interested in public health.

Dr. George Homan, of St. Louis, secretary of the Missouri State Board of Health, next addressed the association. His subject was "Land Habitation as a Public Health Measure." The paper went on to show the bene-

fits which would arise from the individual ownership of homes, as it would render less likely any communicable disease, as well as render easier the fight against disease, by admitting of isolation, a most desirable feature.

One of the most interesting papers of the session was that upon "The Present Position of the Milk Supply Problem, from the Public Health Standpoint, and Some Practical Methods for Securing Safe Public Supplies," by Dr. P. H. Bryce, of Toronto, Can., secretary of the Provincial Board of Health.

He opened by stating that there were about 15,000,000 milch cows in the United States, and 1,000,000 in the province of Ontario, Can. Each one of these gave, on an average, about 100 gallons annually. Not more than 5 per cent. of the supply is used otherwise than as drinking milk.

The standard of normal milk was difficult to establish uniformly; chemically, there was a difference in the kinds of milk, depending on the kinds of the cows giving it, etc.

Statistics were cited showing that a large proportion of cows were infected with tuberculosis, or consumption; and it had been demonstrated, he said, that tuberculous cows could transmit the disease through the milk secretion. In tuberculous cows, the muscle has been found to contain bacilli. Recent investigation proves that tuberculous cows, whose udders are not tuberculous, can transmit the disease to calves and other animals. The danger in the use of such milk is apparent, and the consequent necessity for early finding out the condition of milch cows. The question presents two branches—the healthy condition of the cow at the time of milking, and the preservation of the food milk in as nearly a normal condition as possible. It is certain that this cannot be done if the milk proceeds from diseased tissues.

Upon the question of methods to be used for securing safe public supplies, Doctor Bryce discussed the constituents of milk, and advocated the use of the lactometer to show the addition of water, the removal of the cream, etc. He says cows should be fed on hard grain and grasses, instead of moist and partly decayed grain foods. He said the partly alcoholic and acetic fermentation of the milk produced from the latter food is destructive of its keeping quality. He claimed that there was too little attention paid to this matter by sanitary officers. There is always present a certain amount of acidity in all milks, that can only be neutralized by chemical process. The determination of the degree of this acidity is a material factor in deciding whether a milk is fit for use as a food. If found to be more than 1.1 per cent., it is not good for food. There should be systematic veterinary inspection under the municipal authority. All decomposed foods for the cows should be wholly avoided. The stables should be kept clean, and well lighted and ventilated. The water should be pure, and free from any impure drainage. The milkers should be educated to habits of cleanliness, and aid in the work of protecting the people against infection.

Briefly, Doctor Bryce's summing up of the precautions necessary to healthy milk was thus:

First. It is especially desirable that a system of periodic veterinary inspection be exercised in addition to the dairyman's inspection.

Second. Strong views should be held and exercised regarding the nature and quality of food of cows. All decomposed foods, as those which are liable to undergo fermentation, should be wholly avoided. The best foods are well-ripened grains, and grasses.

Third. The stables of the cows are a point of great importance. Too often dark, damp, ill-ventilated and crowded pens have been the home of this chief of our food supplies. It is quite possible to keep, even on a large scale, a dairy stable free from the ordinary disagreeable stable odors. The water supply to the cows is of equal importance.

Fourth. The care of the milk at the time of taking and subsequently is, of all points, at once the most difficult and the most necessary to supplying a wholesome milk. As De Claux has said: "Cleanliness is everywhere the *sine qua non*." This means, almost, a revolution amongst the farmers and dairymen. The sterilizing of all cans and bottles by steam or dry heat, and the boiling of all strainers, will be necessary.

Fifth. The delivery of milk is of prime importance.

Sixth. When milk has reached the consumer it must be placed in a refrigerator or promptly consumed.

There was an interesting discussion of this paper, many participating.

Prof. F. H. Snow, chancellor of the Kansas State University, followed with an interesting presentation of his method for destroying the chinch-bug. The professor spoke without manuscript or notes, and it was impracticable to epitomize his address. The leading points will be presented elsewhere in this volume.

"A Few Considerations upon the Progress of Public Hygiene" was the title of a paper by Dr. J. Ramon Yeaza, State of Tamaulipas, Mexico. It was read in Spanish by Señor J. A. Vargas, who briefly recapitulated the subject in English. Doctor Yeaza considered the sessions of the association of the utmost importance, and expected much good to result from them, in the way of aiding Mexican officials to improve the sanitary condition of their land.

There was still another contribution by a Mexican delegate. It was the paper of Dr. Nazario Lomas, of Moreles, Mexico, member of the board of health of his State, and director of the general hospital, on "Notes on the Hygiene of Rice Culture." The paper was on the means to antagonize malarial influences arising from irrigation incident to rice culture.

Moreles is the great rice-producing State of Mexico, and Doctor Lomas's paper, a brief one, touched upon the sanitary effects of this culture. The vast rice swamps were declared to be most unsalubrious. The speaker said that rice culture, under irrigation, forms swamps which, submitted to the mean temperature of 28° to 33° centigrade, breed pestilence and disease. The dry system of rice culture, while not so profitable, is also not so

full of danger to public health. Ten hectoliters of rice under irrigation costs the life of one man. Miasms, fevers and death emanate from these swamps. In the State of Tamaulipas, the matter has already been taken up by the government.

The association next proceeded to the report of the committee on "Car Sanitation," by Prof. W. W. Daniels, chairman, of Madison, Wis. Professor Daniels said the great difficulty in the heating arrangement of cars was, that all systems thus far devised are for heating alone, instead of heating and ventilation. If the problem of ventilation were solved, the matter of heating would be well enough cared for.

Professor Daniels censured the railway companies for neglecting to properly care for the health of the public, by allowing their passenger coaches to remain in a most unhealthy condition. "Passenger cars," said he, "should be thoroughly cleaned and renovated before and after each trip. Especially should this be done with cars that had traveled long distances, carrying emigrants." He also censured the present arrangements for heating, and said that very few cars were properly ventilated. He thought that instead of covering the seats with expensive tapestries, leather should be used.

Doctor Sharp, of Kansas City, recommended air cushions that could be removed and cleaned without trouble.

Doctor Reed, of Ohio, said that if the public asked for these things as it demanded fast trains and elegant car upholstery, it would get them.

Under the head of unfinished business, Dr. Charles N. Hewitt, of Red Wing, Minn., secretary of the State Board of Health, read a paper under the following ponderous title:

"The existing methods of dealing with emigrants as respects infectious diseases in England and on English ships, and the notification of infectious diseases among immigrants to the United States the duty of the national sanitary authorities to the sanitary service of the States; an example of such an arrangement between the United States authorities and the State Board of Health of Minnesota."

He spoke of the insufficient quarantine regulations, particularly in England, where they were antiquated and bungling. He spoke also of deficiencies in the United States service. He urged better service in the United States for a beginning. Instances were cited of contagion spreading by reason of deficient quarantine, and considerable discussion resulted.

This practically ended the work of the meeting, which shortly afterward adjourned, to meet in the City of Mexico, in October, 1892.

It was the unanimous opinion that the four days occupied by the meeting had been pleasantly and profitably employed.

D. C. JONES, M. D.

G. H. T. JOHNSON, M. D.

M. O'BRIEN, M. D.

## FINANCIAL AND PROPERTY STATEMENTS.

## FINANCIAL STATEMENT.

(Expenditures on account of the State Board of Health, for the fiscal year ending June 30, 1891.)

Appropriation for the expenses of the Board, including the salary of Secretary, for the period named.....	\$3,500 00
Expenses of the members of the Board in attending meetings of the Board, and sanitary convention, and in inspecting the State charitable institutions.....	\$571 43
Office rent for the year.....	270 00
Postage.....	160 00
Services of janitor.....	60 00
Express charges.....	56 13
Gas.....	6 40
Telegrams.....	4 85
Printing memorials to State Legislature.....	12 00
Copies of proposed amended law.....	4 25
Coal bucket.....	1 00
The expenses of members and committees visiting small-pox outbreaks, and attending meeting of American Public Health Association....	322 30
Dr. R. Alexander, chemical and microscopical examinations.....	20 00
Salary of Secretary.....	2,000 00
Balance unexpended, in hands of State Treasurer.....	11 64
Total.....	<u>\$3,500 00</u>

## PROPERTY STATEMENT.

LIST OF PROPERTY PERTAINING TO THE OFFICE OF THE STATE BOARD OF HEALTH,  
DECEMBER 31, 1891.

1 office clock.	1 stand.
1 office table.	1 wash stand.
1 office chair.	1 wash bowl and pitcher.
1 letter press.	2 rugs.
1 letter copying book.	2 mats.
1 letter-press stand.	1 door mat.
1 pair small scales (for postal matter).	2 book cases.
3 waste baskets.	1 soft coal base-burner.
2 desk baskets.	6 window shades.
1 gas drop-light.	1 dust-pan and duster.
1 lamp.	2 coal buckets.
1 oil can.	1 step ladder.
3 inkstands.	1 upright desk.
2 letter filing cases.	1 small revolving book-case.
4 record books, "A," "B," "C," and "D."	1 wall bracket.
1 journal book, "A."	1 Brussels carpet.
1 cash and property book.	1 ruler.
1 scrap-book.	5 filing prongs.
3 cuspidors.	4 filing hooks.

1 mail box.  
 2 erasers.  
 1 water bowl and brush (for press copying).  
 1 soap dish.  
 1 pitcher.  
 1 looking-glass.  
 4 glass tumblers.  
 2 slop buckets.  
 1 scissors.  
 Am. Monoc Centennial stand, with 3 eye-piece,  
 mechanical stage and case (microscope).  
 Abbé condenser.  
 1½ objective.  
 ⅞ objective.  
 ½ objective.  
 ¼ objective.  
 ⅓ objective.  
 Double nose-piece.  
 Camera lucida.  
 Eye-piece micrometer.  
 Animalcule cage.  
 Blue and ground glass.  
 Bulls-eye condenser.  
 Side reflector.  
 1 analytical bal. No. 7, Becker's.  
 1 Mohr's burette w. gl. stop c., 50 c. c. ⅓.  
 1 Mohr's burette, w. pincher cock, 10 c. c. ⅓.  
 1 Mohr's wood burette supp. for 2 burettes.  
 1 8-oz. retort, Boh. tub and stopp.  
 1 16-oz. retort, Boh. tub and stopp.  
 1 32-oz. retort, Boh. tub and stopp.  
 1 Liebig's cond., 30", on metal stand.  
 1 Liebig's cond. imp., 15", No. 4310.  
 10 Nessler's cylinders, 50 c. c.  
 1 each large, med. and small sp. clamps, nickel pl.  
 1 iron 4-ring stand.  
 1 iron 3-ring stand.  
 1 litre bottle. 1 litre gl. st.  
 1 litre bottle. ½ litre gl. st.  
 1 litre bottle. ¼ litre gl. st.  
 1 litre bottle, 50 cc.  
 1 litre bottle, 25 cc.  
 1 pt. wash bottle flask sh.  
 1 Bunsen burner.  
 1 Bunsen burner, w. stop-cock.  
 1 Bunsen burner, w. tripod and chimney.  
 2 con. parting flasks without ring, 6 oz.

1 4 f. b. Boh. flask.  
 5 No. 4 R. B. porcl. evap. dishes.  
 2 pill tiles, grad., 6x6.  
 1 2.30 cc. vol. pipette.  
 1½ gal. copper dist. app. compl.  
 1 nest pl. Boh. beakers, ½.  
 1 set wts. of precis., Beck.  
 2 doz. asst. Am. f. R. stoppers, 1, 2, 3, 4, incl.  
 2 each 8, 7, 6, 5, 4, 3, 2, bole fr. 1. R. stoppers.  
 1 Fletcher's solid flame burner.  
 12 ft. ½ wh. I. R. tubing.  
 12 ft. ⅓ wh. I. R. tubing.  
 2 Boh. adapters.  
 1-8 Boh. funnel.  
 1 each 1½, 2½, 3½, 4½, 5½ and 6 Boh. funnels.  
 1 tripod, 7" high, w. 3 rings.  
 1 tripod, sheet iron.  
 ½ square ft. brass wire gauze, 2 pieces.  
 1 pipe clay triangle.  
 1-8 copper water bath.  
 1 lb asst. glass rods.  
 1 pr. nickel pl. cinc tongs, double.  
 1 Erlemeyer T. T. stand.  
 1 doz. 6 in. T. tubes.  
 2 T. T. brushes, sp. end.  
 1 wood T. T. clamp.  
 3 lbs. potass. permang., c. p. and bot.  
 3 lbs. soda hydrate stick and bot.  
 1 oz. nitrate silver and bot.  
 1 oz. potass. chromate, c. p. and bot.  
 1 lb. bar. chloride, c. p. and bot.  
 1 lb. abs. p. conc. HNO<sub>3</sub>.  
 ¼ lb. potass. iodide, c. p. and bot.  
 1 oz. mercuric chloride, c. p. and bot.  
 3 lbs. white castile soap.  
 1 oz. potass. ferricy, c. p. and bot.  
 1 oz. potass. sulphocy, c. p. and bot.  
 1 lb. iron sulphide, fused pure.  
 1 lb. iron proto. sulphate, c. p. and bot.  
 10.0 phenolphthaleine and bot.  
 1 oz. asst. germ. glass tubing, ⅓-⅓.  
 1 platin. evap. dish, 11.5.  
 1 platin. evap. dish, 15.9.  
 1 platin. evap. dish, 25.4.  
 1 platin. evap. dish, 36.4.  
 1 platin. crucible and cover, 31.6.

## MISCELLANEOUS.

10 letter files.  
 5 letter books.  
 45 copies First Annual Report, paper.  
 20 copies Second Annual Report, paper.  
 2 copies Third Annual Report, —.  
 40 copies Fourth Annual Report, paper.  
 80 copies Fourth Annual Report, muslin.  
 60 copies Fifth Annual Report, muslin.  
 70 copies Fifth Annual Report, paper.  
 390 copies Sixth Annual Report, muslin.  
 100 copies Sixth Annual Report, paper.

1,000 tablets of birth, death and contagious disease reports.  
 75 books of return certificates of marriages.  
 75 books of return certificates of undertakers' burial-case permits.  
 300 books of return certificates of still-births.  
 1,500 books of return certificates of vaccinations.  
 4,000 pamphlets on prevention of small-pox.  
 500 pamphlets on prevention of scarlet fever.  
 200 pamphlets on prevention of diphtheria.  
 1,000 pamphlets on prevention of typhoid fever.

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Transactions Connecticut State Medical Society, 1891, 1 vol., pa.  
 Register of Physicians, 1877-1886, Illinois State Board of Health, 1 vol., pa.  
 Report on Medical Education in United States and Canada, 1765-1889, Board of Health, 1 vol., pa.  
 Medical Education and Medical Colleges, 1765-1889, Board of Health, 1 vol., pa.  
 Purification of Sewage and Water, 1890, Massachusetts State Board of Health, 1 vol.  
 Examinations of Water Supplies, 1890, Massachusetts State Board of Health, 1 vol.  
 Report of Corrections and Charities, 1883 to 1889, Minnesota State Board of Health, 4 vols., 2 pa.  
 Commissioners of Lunacy Report, 1890, New Hampshire, 1 vol.  
 Register of Physicians, 1881-1888, Pennsylvania State Board of Health, 1 vol., pa.  
 Transactions Tennessee State Medical Society, 1890, 1 vol.  
 Transactions Texas State Medical Society, 1891, 1 vol.  
 National Board of Health Reports, 1879-'82 to '85, 5 vols., 1 pa.  
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 Department of Agriculture, Animal Parasites of Sheep, 1890, 1 vol.  
 Surgeon General of the Navy, Reports, 1879-1884, 1889-1890, 6 vols., 1 pa.  
 Hygienic and Medical Reports, Navy Department, 1879, 1 vol., pa.  
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 State Geological Survey of Ohio, Economic Geology, Vol. 6, 1888, 1 vol.  
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State Librarian, 1884, 1 vol., pa.

## METEOROLOGICAL OBSERVATIONS

FOR THE YEAR 1891.

The following meteorological observations for the year 1891, taken at Lawrence, Kas., under the direction of Prof. F. H. Snow, chancellor of the State University, will be found worthy of study:

## JANUARY.

The temperature was above the average, making this one of the five warmest Januaries on our 24 years' record. In 1876, 1878, and 1882, the January mean temperature was but slightly above that of the past month, but the phenomenal January of 1880 was nearly 10 degrees warmer. The cloudiness and rainfall were above the average, and the wind velocity was normal.

*Mean Temperature*—32.37 degrees, which is 7.20 degrees above the January average. The highest temperature was 57 degrees, on the 26th; the lowest was 10 degrees, on the 3d, giving a range of 47 degrees. Mean temperature at 7 A. M., 27.45 degrees; at 2 P. M., 39.14 degrees; at 9 P. M., 31.45 degrees.

*Rainfall* (including melted snow)—1.43 inches, which is .15 inch above the January average. Rain and snow fell in measurable quantities on 7 days. There was 1 thunder shower. The entire depth of snow was 4.5 inches.

*Mean Cloudiness*—53.71 per cent. of the sky, the month being 5.33 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 12; half clear (from one- to two-thirds cloudy), 6; cloudy (more than two-thirds), 13. There were 2 entirely clear days and 7 entirely cloudy. Mean cloudiness at 7 A. M., 51.45 per cent.; at 2 P. M., 61.13 per cent.; at 9 P. M., 48.55 per cent.

*Wind*.—Northwest, 37 times; southwest, 24 times; southeast, 7 times; northeast, 6 times; east, 6 times; west, 5 times; south, 5 times; north, 3 times. The total run of the wind was 11,690 miles, which is 81 miles below the January average. This gives a mean daily velocity of 377 miles, and a mean hourly velocity of 15.71 miles. The highest velocity was 60 miles an hour, from 12 M. to 1 P. M., on the 1st.

*Barometer*.—Mean for the month, 29.161 inches; at 7 A. M., 29.143 inches; at 2 P. M., 29.143 inches; at 9 P. M., 29.181 inches; maximum, 29.493 inches, on the 16th; minimum, 28.478 inches, on the 1st; monthly range, 1.015 inches.

*Relative Humidity*.—Mean for the month, 85.3; at 7 A. M., 97.1; at 2 P. M., 70.2; at 9 P. M., 88.7; greatest, 100, on 19 occasions; least, 44, on the 26th. There were no fogs.

## FEBRUARY.

The coldest month of the winter, and one of the eight coldest Februaries of our 24 years' record. The mercury, however, did not fall below the zero point during the month, nor during the entire winter. There have been but two previous winters in which the zero point was not reached—the winters of 1877-'78 and 1881-'82. In mean temperature, seven of the past 23 winters have been warmer, and 16 have been colder, than the winter now closed.

Maple trees were in blossom along the streets of Lawrence on the 23d of February. The rainfall, including melted snow, was fully 50 per cent. above the February average.

*Mean Temperature*—29.40 degrees, which is 2.49 degrees below the February average. The highest temperature was 68 degrees, on the 24th; the lowest was 1

degree above zero, on the 28th, giving a range of 67 degrees. Mean temperature at 7 A. M., 24.87 degrees; at 2 P. M., 36.32 degrees; at 9 P. M., 28.20 degrees.

*Rainfall* (including melted snow and sleet)—1.98 inches, which is .69 inch above the February average. Rain and snow in measurable quantities fell on 4 days. There were 4.5 inches of snow.

*Mean Cloudiness*—43.40 per cent. of the sky, the month being 4.35 per cent. clearer than usual. Number of clear days (less than one-third cloudy), 14; half-clear (from one- to two-thirds cloudy), 9; cloudy (more than two-thirds), 5. There were 5 entirely clear days and 3 entirely cloudy. Mean cloudiness at 7 A. M., 42.32 per cent.; at 2 P. M., 48.22 per cent.; at 9 P. M., 43.40 per cent.

*Wind*.—Northwest, 30 times; southwest, 17 times; south, 11 times; southeast, 9 times; north, 6 times; northeast, 5 times; east, 3 times; west, 3 times. The total run of the wind was 11,860 miles, which is 849 miles above the February average. This gives a mean daily velocity of 432 miles, and a mean hourly velocity of 17.65 miles. The highest velocity was 55 miles an hour, between 12 M. and 1 P. M. on the 1st.

*Barometer*.—Mean for the month, 29.094 inches; at 7 A. M., 29.112 inches; at 2 P. M., 29.060 inches; at 9 P. M., 29.110 inches; maximum, 29.555 inches, on the 28th; minimum, 28.437 inches, on the 24th; monthly range, 1.118 inches.

*Relative Humidity*.—Mean for the month, 84.0; at 7 A. M., 94.7; at 2 P. M., 68.9; at 9 P. M., 88.5; greatest, 100, on several occasions; least, 42.1, on the 14th. There was 1 fog.

#### MARCH.

The coldest March in 15 years. Only two others in 23 years have been colder—those of 1869 and 1876. The rainfall and wind were excessive, and the cloudiness was much above the average. No other March has approached the present one in high percentage of humidity.

*Mean Temperature*—35.12 degrees, which is 6.34 degrees below the March average. The highest temperature was 71 degrees, on the 29th; the lowest was 3 degrees, on the 4th, giving a range of 68 degrees. Mean temperature at 7 A. M., 29.52 degrees; at 2 P. M., 40.82 degrees; at 9 P. M., 35.08 degrees.

*Rainfall* (including melted snow and sleet)—3.04 inches, which is .89 inch above the March average. Rain and snow in measurable quantities fell on 7 days. Snow fell on 4 days, and the entire depth was 9 inches. There was 1 thunder shower. The entire rainfall for the 3 months of 1891 now completed has been 6.45 inches, which is 1.61 inches above the average for the same months in the preceding 23 years.

*Mean Cloudiness*—53.12 per cent. of the sky, the month being 11.14 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 8; half-clear (from one- to two-thirds cloudy), 9; cloudy (more than two-thirds), 14. There were 3 entirely clear days and 8 entirely cloudy. Mean cloudiness at 7 A. M., 50.97 per cent.; at 2 P. M., 61.94 per cent.; at 9 P. M., 46.45 per cent.

*Wind*.—Northwest, 29 times; northeast, 12 times; north, 12 times; east, 12 times, southeast, 9 times; southwest, 7 times; west, 7 times; south, 5 times. The total run of the wind was 15,130 miles, which is 1,074 miles above the March average. This gives a mean daily velocity of 488 miles, and a mean hourly velocity of 20 miles. The highest velocity was 55 miles an hour, between 9 and 10 A. M. on the 21st.

*Barometer*.—Mean for the month, 29.079 inches; at 7 A. M., 29.095 inches; at 2 P. M., 29.068 inches; at 9 P. M., 29.074 inches; maximum, 29.558 inches, on the 14th; minimum, 28.700 inches, on the 20th; monthly range, .858 inch.

*Relative Humidity*.—Mean for the month, 80.7; at 7 A. M., 90.8; at 2 P. M., 68.2; at 9 P. M., 83.3; greatest, 100, on 9 occasions; least, 44, on the 31st. There was 1 fog.

## APRIL.

The month was warm and clear, with frequent rainfall. No April on our record has had so much rain, though in 1878, 1884 and 1885 the precipitation approached that of the present month. The total run of the wind was 2,500 below the monthly normal. The last light frost of spring occurred on the 4th.

*Mean Temperature*—57.02 degrees, which is 2.64 degrees above the April average. The highest temperature was 85 degrees, on the 26th; the lowest was 25 degrees, on the 4th, giving a range of 60 degrees. Mean temperature at 7 A. M., 51.32 degrees; at 2 P. M., 63.57 degrees; at 9 P. M., 55.60 degrees.

*Rainfall*—5.79 inches, which is 2.69 inches above the April average. Rain in measurable quantities fell on 11 days. There were 8 thunder showers. The entire rainfall for the 4 months of 1891 now completed has been 12.24 inches, which is 4.23 inches above the average for the same months in the preceding 23 years.

*Mean Cloudiness*—43.67 per cent. of the sky, the month being 4.43 per cent. clearer than usual. Number of clear days (less than one-third cloudy), 13; half-clear (from one- to two-thirds cloudy), 9; cloudy (more than two-thirds), 8. There were 4 entirely clear days and 1 entirely cloudy. Mean cloudiness at 7 A. M., 51.67 per cent.; at 2 P. M., 48.67 per cent.; at 9 P. M., 30.67 per cent.

*Wind*.—Northwest, 24 times; southwest, 17 times; southeast, 16 times; north, 9 times; east, 9 times; south, 8 times; west, 4 times; northeast, 3 times. The total run of the wind was 11,090 miles, which is 2,691 miles below the April average. This gives a mean daily velocity of 370 miles, and a mean hourly velocity of 15.40 miles. The highest velocity was 38 miles an hour, on the 8th and 29th.

*Barometer*.—Mean for the month, 29.072 inches; at 7 A. M., 29.091 inches; at 2 P. M., 29.057 inches; at 9 P. M., 29.070 inches; maximum, 29.484 inches, on the 4th; minimum, 28.737 inches, on the 8th; monthly range, .747 inch.

*Relative Humidity*.—Mean for the month, 73.5; at 7 A. M., 74.7; at 2 P. M., 67.3; at 9 P. M., 78.7; greatest, 100, on the 9th; least, 33, on the 5th. There was 1 fog.

## MAY.

The coldest May on our 24 years' record except that of 1882. There were 2 harmless white frosts, on the 6th and 11th. The rainfall was more than 50 per cent. above the May average, and has been but three times exceeded—in 1873, 1876, and 1889. The wind velocity was below the average and the cloudiness was normal.

*Mean Temperature*—61.23 degrees, which is 3.94 degrees below the May average. The highest temperature was 88 degrees, on the 20th; the lowest was 38 degrees, on the 7th, giving a range of 50 degrees. Mean temperature at 7 A. M., 56.11 degrees; at 2 P. M., 68.90 degrees; at 9 P. M., 60 degrees.

*Rainfall*—6.55 inches, which is 2.27 inches above the May average. Rain fell in measurable quantities on 10 days. There were 6 thunder showers. The entire rainfall for the 5 months of 1891 now completed has been 18.79 inches, which is 6.54 inches above the average for the same months in the preceding 23 years.

*Mean Cloudiness*—47.4 per cent. of the sky, the month being less than 1 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 11; half-clear (from one- to two-thirds cloudy), 11; cloudy (more than two-thirds), 9. There were 2 entirely clear days and 3 entirely cloudy. Mean cloudiness at 7 A. M., 50 per cent.; at 2 P. M., 55.48 per cent.; at 9 P. M., 36.77 per cent.

*Wind*.—Northeast, 20 times; southwest, 16 times; east, 15 times; south, 14 times; southeast, 12 times; north, 7 times; northwest, 5 times; west, 4 times. The total run of the wind was 9,730 miles, which is 2,082 miles below the May average. This gives a mean daily velocity of 314 miles, and a mean hourly velocity of 13 miles. The highest velocity was 45 miles an hour, from 3 to 4 P. M. on the 20th.

*Barometer.*—Mean for the month, 29.153 inches; at 7 A. M., 29.173 inches; at 2 P. M., 29.140 inches; at 9 P. M., 29.147 inches; maximum, 29.465 inches, on the 5th; minimum, 28.719 inches, on the 20th; monthly range, .746 inch.

*Relative Humidity.*—Mean for the month, 78.1; at 7 A. M., 84.3; at 2 P. M., 67.6; at 9 P. M., 82.4; greatest, 100, on several occasions; least, 36, on the 7th. There was no fog.

## JUNE.

The month was one of extremes. June, 1876, seems to have been a very similar one. And it and the present month lead the other years of our record in inches of rain and percentage of cloudiness. This is the coolest June since 1886, and but three have been cooler. The barometer column was lower, with two exceptions (1881 and 1888), than in any other June of our record; while the humidity of no other June has approached that of the present one. The wind was considerably below the average.

*Mean Temperature*—70.74 degrees, which is 2.65 degrees below the June average. The highest temperature was 90.5 degrees, on the 28th; the lowest was 53 degrees, on the 7th, giving a range of 37.5 degrees. Mean temperature at 7 A. M., 67.53 degrees; at 2 P. M., 77.72 degrees; at 9 P. M., 68.85 degrees.

*Rainfall*—10.15 inches, which is 5.38 inches above the June average. Rain fell in measurable quantities on 18 days. There were 8 thunder showers. The entire rainfall for the 6 months of 1891 now completed has been 28.94 inches, which is 11.81 inches above the average for the same months in the preceding 23 years.

*Mean Cloudiness*—61.35 per cent. of the sky, the month being 20.07 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 5; half clear (from one- to two-thirds cloudy), 12; cloudy (more than two-thirds), 13. There were no entirely clear days and 6 entirely cloudy. Mean cloudiness at 7 A. M., 71.17 per cent.; at 2 P. M., 66.33 per cent.; at 9 P. M., 47 per cent.

*Wind.*—Southwest, 15 times; south, 13 times; east, 12 times; northwest, 12 times; southeast, 8 times; northeast, 6 times; north, 6 times; west, 3 times. The total run of the wind was 8,700 miles, which is 1.148 miles below the June average. This gives a mean daily velocity of 290 miles, and a mean hourly velocity of 12 miles. The highest velocity was 48 miles an hour, from 7:40 to 8 P. M. on the 15th.

*Barometer.*—Mean for the month, 28.983 inches; at 7 A. M., 28.997 inches; at 2 P. M., 28.967 inches; at 9 P. M., 28.983 inches; maximum, 29.281 inches, on the 4th; minimum, 28.589 inches, on the 19th; monthly range, .692 inch.

*Relative Humidity.*—Mean for the month, 87.5, which is 17.5 above the average; at 7 A. M., 92; at 2 P. M., 79.3; at 9 P. M., 90.7; greatest, 100, on several occasions; least, 60, on the 13th. There were 2 fogs.

## JULY.

The coldest July (mean temperature, 71.98 degrees) on our 24 years' record; July, 1882, comes next to this month, with a mean temperature of 72.05 degrees. The mercury reached 90 degrees on no day of the month, 89.5 degrees being the maximum temperature reached. No other July in our 24 years shows a maximum below 90 degrees. The rainfall (6.40 inches) has been exceeded in but four Julys of our record. The wind velocity was below the average.

*Mean Temperature*—71.98 degrees, which is 5.85 degrees below the July average. The highest temperature was 89.5 degrees, on the 22d. Mean temperature at 7 A. M., 67.08 degrees; at 2 P. M., 79.47 degrees; at 9 P. M., 70.68 degrees.

*Rainfall*—6.40 inches, which is 2.08 inches above the July average. Rain fell in measurable quantities on 11 days. There were 8 thunder showers. The entire

rainfall for the 7 months of 1891 now completed has been 35.34 inches, which is 15.11 inches above the average for the same months in the preceding 23 years.

*Mean Cloudiness*—44.59 per cent. of the sky, the month being 7.44 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 10; half clear (from one- to two-thirds cloudy), 16; cloudy (more than two-thirds), 5. There were 3 entirely clear days and 3 entirely cloudy. Mean cloudiness at 7 A. M., 52 per cent.; at 2 P. M., 43.93 per cent.; at 9 P. M., 37.83 per cent.

*Wind*.—Southwest, 23 times; south, 11 times; east, 9 times; northwest, 10 times; southeast, 17 times; northeast, 7 times; north, 6 times; west, 3 times. The total run of the wind was 7,822 miles, which is 199 miles below the July average. This gives a mean daily velocity of 252 miles, and a mean hourly velocity of  $10\frac{1}{2}$  miles. The highest velocity was 37 miles an hour, from 12 M. to 1 P. M. on the 11th.

*Barometer*.—Mean for the month, 29.108 inches; at 7 A. M., 29.123 inches; at 2 P. M., 29.098 inches; at 9 P. M., 29.068 inches; maximum, 29.297 inches, on the 9th; minimum, 28.844 inches, on the 7th; monthly range, .279 inch.

*Relative Humidity*.—Mean for the month, 82.13, which is 11.3 above the average; at 7 A. M., 91.43; at 2 P. M., 67.61; at 9 P. M., 87.33; greatest, 100, on several occasions; least, 52, on the 8th. There were no fogs.

#### AUGUST.

A month of little rainfall, but high relative humidity, only four Augusts in the past 23 years showing less rainfall, and but two a higher per cent. of humidity. A little cooler than the average, the maximum temperature reached being 93.7 degrees. The total run of wind was 528 miles above the average, and the wind was in the north astonishingly often.

*Mean Temperature*—72.49 degrees, which is 2.64 degrees below the August average. The highest temperature was 93.7 degrees, on the 9th; the lowest was 48 degrees, on the 24th, giving a range of 45.7 degrees. The mercury reached 90 degrees on 7 days. Mean temperature at 7 A. M., 66.10 degrees; at 2 P. M., 80.91 degrees; at 9 P. M., 71.36 degrees.

*Rainfall*—1.18 inches, which is 2.85 inches above the August average. Rain fell in measurable quantities on 6 days. There were 3 thunder showers. The entire rainfall for the 8 months of 1891 now completed has been 36.52 inches, which is 12.13 inches above the average for the same months in the preceding 23 years. Last year 21.79 inches of rain fell during these 8 months.

*Mean Cloudiness*—25.59 per cent. of the sky, the month being 9.70 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 18; half clear (from one- to two-thirds cloudy), 13; cloudy (more than two-thirds), 0. There were 3 entirely clear days and none entirely cloudy. Mean cloudiness at 7 A. M., 30.65 per cent.; at 2 P. M., 32.26 per cent.; at 9 P. M., 13.87 per cent.

*Wind*.—Southwest, 10 times; south, 10 times; east, 2 times; northwest, 13 times; southeast, 11 times; northeast, 7 times; north, 14 times; west, 4 times. The total run of the wind was 8,910 miles, which is 528 miles above the August average. This gives a mean daily velocity of 287 miles, and a mean hourly velocity of 11.97 miles. The highest velocity was 36 miles an hour, from 1:30 to 2:30 P. M. on the 6th. On the 21st, 14 miles were run in 15 minutes.

*Barometer*.—Mean for the month, 29.084 inches; at 7 A. M., 29.105 inches; at 2 P. M., 29.074 inches; at 9 P. M., 29.071 inches; maximum, 29.367 inches, on the 27th; minimum, 28.841 inches, on the 20th; monthly range, .526 inch.

*Relative Humidity*.—Mean for the month, 78.54, which is 8 above the average; at 7 A. M., 91.03; at 2 P. M., 62.80; at 9 P. M., 81.50; greatest, 100, on several occasions; least, 40, on the 30th. There were no fogs.

## SEPTEMBER.

Only four Septembers on our 24 years' record have had a higher average temperature (1881, 1882, 1884, and 1886); but the mean temperature of the second half of this September (71.66 degrees) was 5.34 degrees higher than that of the first half, and higher than the second half of any preceding September. The sky was extraordinarily clear, only one preceding September having been clearer (1858). The rainfall was more than one-third below the average, and the barometer had a very slight range.

*Mean Temperature*—69 degrees, which is 2.91 degrees above the September average. The highest temperature was 90 degrees, on the 15th and 18th; the lowest was 43 degrees, on the 29th, giving a range of 47 degrees. Mean temperature at 7 A. M., 61.32 degrees; at 2 P. M., 79.24 degrees; at 9 P. M., 67.72 degrees.

*Rainfall*—2.23 inches, which is 1.37 inches below the September average. Rain fell in measurable quantities on 5 days. There was 1 thunder shower. The entire rainfall for the 9 months of 1881 now completed has been 38.75 inches, which is 9.88 inches above the average for the same months in the preceding 23 years, and 3.21 inches above the entire average annual rainfall for this station.

*Mean Cloudiness*—23.53 per cent. of the sky, the month being 16.97 per cent. clearer than usual. Number of clear days (less than one-third cloudy), 22; half clear (from one- to two-thirds cloudy), 7; cloudy (more than two-thirds), 1. There were 9 entirely clear days and 1 entirely cloudy. Mean cloudiness at 7 A. M., 23 per cent.; at 2 P. M., 29 per cent.; at 9 P. M., 9 per cent.

*Wind*.—Southwest, 37 times; south, 14 times; southeast, 13 times; northeast, 10 times; northwest, 7 times; east, 5 times; north, 4 times. The total run of the wind was 9,780 miles, which is 460 miles below the September average. This gives a mean daily velocity of 326 miles, and a mean hourly velocity of 13.58 miles. The highest velocity was 45 miles an hour, on the 17th.

*Barometer*.—Mean for the month, 29.175 inches; at 7 A. M., 29.204 inches; at 2 P. M., 29.160 inches; at 9 P. M., 29.161 inches; maximum, 29.351 inches, on the 9th; minimum, 28.990 inches, on the 27th; monthly range, .361 inch.

*Relative Humidity*.—Mean for the month, 74.7; at 7 A. M., 92.4; at 2 P. M., 54.3; at 9 P. M., 77.5; greatest, 100, on 7 occasions; least, 23, on the 13th. There was 1 fog.

## OCTOBER.

Although the mean temperature of the entire month was slightly below the October normal, the mean for the last half of the month (16 days) was more than 3 degrees higher than that of the first half (15 days), and much higher than that of any preceding second half of October on our 24 years' record, except that of 1876. There was no black frost during the month, and unpicked apples still hung uninjured on the trees, and foliage of Maderia vines and other vegetation above ground remained unharmed in the Lawrence gardens. The first snow of the season occurred on the 6th—a few flakes only. This is more than a month earlier than the average date. The rainfall was less than half the average; the skies were 30 per cent. clearer than usual, and the wind velocity was 10 per cent. higher than the normal.

*Mean Temperature*—54.14 degrees, which is .27 degree below the October average. The highest temperature was 86 degrees, on the 2d; the lowest was 32 degrees, on the 22d, giving a range of 54 degrees. Mean temperature at 7 A. M., 45.58 degrees; at 2 P. M., 65.35 degrees; at 9 P. M., 52.82 degrees.

*Rainfall*—1.35 inches, which is 1.65 inches below the October average. Rain fell in measurable quantities on 5 days. There was 1 thunder shower. The entire rainfall for the 10 months of 1891 now completed has been 40.10 inches, which is

8.23 inches above the average for the same months in the preceding 23 years, and 4.56 inches above the entire average annual rainfall for this station.

*Mean Cloudiness*—27.53 per cent. of the sky, the month being 10.70 per cent. clearer than usual. Number of clear days (less than one-third cloudy), 22; half clear (from one- to two-thirds cloudy), 6; cloudy (more than two-thirds), 3. There were 11 entirely clear days and 2 entirely cloudy. Mean cloudiness at 7 A. M., 34.84 per cent.; at 2 P. M., 29.03 per cent.; at 9 P. M., 18.71 per cent.

*Wind*.—Southwest, 23 times; north, 21 times; northwest, 19 times; south, 16 times; southeast, 7 times; west, 5 times; northeast, 2 times. The total run of the wind was 12,570 miles, which is 1,200 miles above the October average. This gives a mean daily velocity of 405.45 miles, and a mean hourly velocity of 16.87 miles. The highest velocity was 60 miles an hour, on the 16th, from 12:35 to 12:40 P. M.

*Barometer*.—Mean for the month, 29.217 inches; at 7 A. M., 29.234 inches; at 2 P. M., 29.194 inches; at 9 P. M., 29.214 inches; maximum, 29.620 inches, on the 27th; minimum, 28.929 inches, on the 16th; monthly range, .691 inch.

*Relative Humidity*.—Mean for the month, 72.4; at 7 A. M., 87.8; at 2 P. M., 53.72; at 9 P. M., 75.5; greatest, 100, on 9 occasions; least, 28, on the 28th. There were 3 fogs.

#### NOVEMBER.

Of the preceding 23 Novembers, 12 have been warmer and 11 colder than the month just closed. The rainfall was less than half the average, and this was the fourth successive month with a marked deficiency in the rainfall. The wind velocity and cloudiness were both above the normal. The mercury first fell slightly below the freezing point on the 1st, 11 days later than the average date; but the first hard freeze of the season did not occur until the 10th. Only 17 November days on our record have been colder than the 17th, and of these six were in November, 1872.

*Mean Temperature*—39.46 degrees, which is .51 degree below the November average. The highest temperature was 80 degrees, on the 6th; the lowest was 10 degrees, on the 17th, giving a range of 70 degrees. Mean temperature at 7 A. M., 32.20 degrees; at 2 P. M., 46.38 degrees; at 9 P. M., 39.63 degrees.

*Rainfall*—.81 inch, which is 1.18 inches below the November average. Rain or snow fell in measurable quantities on 7 days. There was 1 inch of snow on the 20th. There were no thunder showers. The entire rainfall for the 11 months of 1891 now completed has been 40.91 inches, which is 7.05 inches above the average for the same months in the preceding 23 years, and 5.31 inches above the entire average annual rainfall for this station.

*Mean Cloudiness*—54.33 per cent. of the sky, the month being 9.56 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), 11; half clear (from one- to two-thirds cloudy), 9; cloudy (more than two-thirds), 10. There were 4 entirely clear days and 6 entirely cloudy. Mean cloudiness at 7 A. M., 61 per cent.; at 2 P. M., 58.33 per cent.; at 9 P. M., 44.66 per cent.

*Wind*.—Southwest, 20 times; northwest, 19 times; north, 18 times; east, 10 times; south, 8 times; southeast, 7 times; northeast, 6 times; west 2 times. The total run of the wind was 12,475 miles, which is 568 miles above the November average. This gives a mean daily velocity of 415.8 miles, and a mean hourly velocity of 17.33 miles. The highest velocity was 50 miles an hour, on the 21st, from 9 to 10 P. M.

*Barometer*.—Mean for the month, 29.155 inches; at 7 A. M., 29.177 inches; at 2 P. M., 29.133 inches; at 9 P. M., 29.153 inches; maximum, 29.777 inches, on the 17th; minimum, 28.608 inches, on the 7th; monthly range, 1.169 inches.

*Relative Humidity*.—Mean for the month, 75.5; at 7 A. M., 93.2; at 2 P. M., 56.5; at 9 P. M., 76.9; greatest, 100, on 12 occasions; least, 28, on the 9th. There was no fog.



## DECEMBER.

There have been but three warmer Decembers on our 24 years' record—1877, 1881, and 1889. The degree of cloudiness was lower than in any December except that of 1890. The rainfall exceeded the average for the first time since July. The monthly velocity of the wind was greater than in any preceding December, reaching nearly 15,000 miles. The month closed with a vigorous thunder storm.

*Mean Temperature*—38.26 degrees, which is 7.86 degree above the December average. The highest temperature was 63 degrees, on the 2d; the lowest was 10 degrees, on the 7th, giving a range of 53 degrees. Mean temperature at 7 A. M., 32.43 degrees; at 2 P. M., 45.76 degrees; at 9 P. M., 37.42 degrees.

*Rainfall* (including melted snow)—2.41 inches, which is .88 inch above the December average. Rain or snow fell in measurable quantities on 8 days. The entire depth of snow was 3 inches. There were 3 thunder showers. The entire rainfall for the 12 months of 1891, now completed, has been 43.32 inches, which is 7.78 inches above the average annual rainfall of the preceding 23 years.

*Mean Cloudiness*—36.56 per cent. of the sky, the month being 14.60 per cent. clearer than usual. Number of clear days (less than one-third cloudy), 20; half clear (from one- to two-thirds cloudy), 5; cloudy (more than two-thirds), 6. There were 5 entirely clear days and 3 entirely cloudy. Mean cloudiness at 7 A. M., 33.55 per cent.; at 2 P. M., 52.58 per cent.; at 9 P. M., 23.55 per cent.

*Wind*.—Southwest, 36 times; south, 13 times; northwest, 12 times; northeast, 9 times; southeast, 9 times; west, 6 times; north, 5 times; east, 3 times. The total run of the wind was 14,790 miles, which is 2,985 miles above the December average. This gives a mean daily velocity of 477.10 miles, and a mean hourly velocity of 19.88 miles. The highest velocity was 60 miles an hour, from 12:30 to 12:35 P. M., on the 28th.

*Barometer*.—Mean for the month, 29.074 inches; at 7 A. M., 29.084 inches; at 2 P. M., 29.050 inches; at 9 P. M., 29.087 inches; maximum, 29.695 inches, on the 11th; minimum, 28.460 inches, on the 3d; monthly range, 1.225 inches.

*Relative Humidity*.—Mean for the month, 76.1; at 7 A. M., 88.1; at 2 P. M., 63.2; at 9 P. M., 77.0; greatest, 100, on numerous occasions; least, 28, on the 16th. There was no fog.

## SUMMARY FOR THE YEAR.

The year 1891 was marked by an abundant aggregate rainfall, although the distribution was uneven—four months of excess (April, May, June, and July) being followed by four months of deficiency. The year was made meteorologically memorable by having the coolest summer on the record, and by being the only year in which the temperature failed to go to the zero point.

This year completes a period of 24 years since the beginning of these observations upon the weather. If this period be divided into two equal parts, the average rainfall of the second 12 years is found to be 1.70 inches greater than that of the first 12 years.

*Temperature.*

Mean temperature of the year, 52.60 degrees, which is .24 degree above the mean of the 23 preceding years. The highest temperature was 93.7 degrees, on August 9th; the lowest was 1 degree above zero, on February 28th, giving a range of 92.7 degrees. Mean at 7 A. M., 46.79 degrees; at 2 P. M., 60.46 degrees; at 9 P. M., 51.57 degrees.

Mean temperature of the winter months, 33.24 degrees, which is 4.28 degrees above the average winter temperature; of the spring, 51.12 degrees, which is .31 degree

above the average; of the summer, 71.74 degrees, which is 3.87 degrees below the average; of the autumn, 54.20 degrees, which is .71 degree above the average.

The warmest month of the year was August, with mean temperature of 72.49 degrees; the warmest week was August 14th to 20th—mean, 79.64 degrees; the warmest day was August 9th—mean, 85.85 degrees. The mercury reached or exceeded 90 degrees on only 10 days (29 below the average number). Of these 10 hot days, 1 was in June, 7 were in August, and 2 in September.

The coldest month was February, with mean temperature 29.40 degrees; the coldest week was February 25th to March 3d, mean temperature 20.64 degrees; the coldest day was February 28th, mean 12.5 degrees above zero. The mercury did not fall below zero during the year.

The last hoar frost of spring was on May 11th; the first hoar frost of autumn was on September 4th; giving an interval of 116 days, or nearly 4 months, entirely without frost. This is 38 days shorter than the average interval.

The last severe frost of spring was on April 4th; the first severe frost of autumn was on November 1st; giving an interval of 211 days, or nearly seven months, without severe frost. The average interval is 200 days. No frosts during spring or autumn caused damage to crops of grain and fruit.

#### *Rain.*

The entire rainfall, including melted snow, was 43.32 inches, which is 7.78 inches above the annual average. Either rain or snow, or both, in measurable quantities, fell on 99 days—one less than the average. On 23 other days rain or snow fell in quantities too small for measurement. The heaviest rain of the year was 2.78 inches, on June 1st. The number of thunder showers was 39.

#### *Snow.*

The entire depth of snow was 22.25 inches, of which 4.5 inches fell in January' 4.5 inches in February, 9.25 inches in March, 1 inch in November, and 3 inches in December. This is 1.25 inches above the annual average. Snow fell on 22 days, on 9 of which the quantity was too small for measurement. The last snow flurry of spring was on April 2d; the first snow of autumn was on October 6th—36 days earlier than the average date.

#### *Face of the Sky.*

The mean cloudiness of the year was 42.90 per cent., which is 1.14 per cent. below the average. The number of clear days (less than one-third cloudy) was 166; half clear (from one- to two-thirds cloudy), 112; cloudy (more than two-thirds), 87. There were 67 days on which the cloudiness reached or exceeded 80 per cent. There were 54 entirely clear and 43 entirely cloudy days. The clearest month was September, with a mean of 23.53 per cent.; the cloudiest month was June—mean, 61.35 per cent. The percentage of cloudiness at 7 A. M. was 46.83; at 2 P. M., 48.99; at 9 P. M., 32.89.

#### *Direction of the Wind.*

During the year—3 observations daily—the wind was from the southwest 279 times; northwest, 218 times; southeast, 126 times; northeast, 95 times; south, 131 times; north, 113 times; east, 87 times; west, 46 times. The south winds (including southwest, south, and southeast) outnumbered the north (including northwest, north, and northeast) in the ratio of 536 to 426.

#### *Velocity of the Wind.*

The number of miles traveled by the wind during the year was 134,547, which is 15 miles above the average for the preceding 18 years. This gives a mean daily velocity of 368.62 miles, and a mean hourly velocity of 15.36 miles. The highest ve-

locity was 60 miles an hour, on three occasions — once each in January, October, and December. The highest daily velocity was 870 miles, on the 25th of March; the highest monthly velocity was 15,130 miles, in March. The windiest months were March, October, November, and December; the calmest months were May, June, July, and August. The average velocity at 7 A.M. was 14.29 miles; at 2 P.M., 17.10 miles; at 9 P.M., 15.51 miles.

#### Barometer.

Mean height of barometer column, 29.113 inches, which is .006 inch above the annual average. Mean at 7 A.M., 29.131 inches; at 2 P.M., 29.095 inches; at 9 P.M., 29.110 inches; maximum, 29.777 inches, on November 17th; minimum, 28.437 inches, on February 24th; yearly range, 1.300 inches. The highest monthly mean was 29.214 inches, in October; the lowest was 28.982 inches, in June. The barometer observations are corrected for temperature and instrumental error only.

#### Relative Humidity.

The average atmospheric humidity for the year was 79.0; at 7 A.M., 80.8; at 2 P.M., 64.9; at 9 P.M., 82.3. The dampest month was June, with mean humidity of 87.5; the driest month was October — mean humidity, 72.4. There were only 9 fogs during the year. The lowest humidity for any single observation was 28 per cent., which figure was reached on three occasions — one each in October, November, and December.

METEOROLOGICAL TABLE FOR TWENTY-FOUR YEARS.

1868-1891.

YEAR.	Mean temperature.....	Maximum temperature.....	Minimum temperature*.....	Hot days (above 50 deg.).....	Zero days.....	Days between severe frosts.....	Rain — inches.....	Snow — inches.....	Freezing days.....	Thunder storms.....	Mean cloud- iness.....	Humidity.....	No. of fogs.....	Miles of wind.....	Mean baromet- er.....
1868.....	52.77	101.0	-16.5	43	7	160	37.48	27.5	77	.....	42.35	.....	.....	.....	.....
1869.....	50.51	96.0	-5.0	23	2	167	38.51	18.0	105	33	49.23	78.2	19	.....	29.103
1870.....	53.70	102.0	-10.0	51	6	197	31.32	9.5	100	27	47.88	68.1	13	.....	29.097
1871.....	53.56	103.0	-6.0	48	8	218	33.23	29.7	120	24	47.37	65.9	6	.....	29.076
1872.....	51.30	97.0	-18.0	45	16	192	32.63	23.2	116	40	44.33	64.1	11	.....	29.112
1873.....	51.96	104.0	-26.0	48	9	165	32.94	26.5	101	17	42.46	64.0	6	154,508	29.093
1874.....	53.68	108.0	-3.0	58	2	187	28.87	43.0	99	20	45.54	65.7	11	115,865	29.121
1875.....	50.63	99.0	-16.5	32	12	193	28.87	5.0	106	21	44.81	66.7	5	145,316	29.102
1876.....	52.76	98.0	-5.0	36	4	179	44.18	25.7	102	29	41.27	66.8	4	148,120	29.102
1877.....	54.16	99.0	-9.0	20	2	217	41.09	15.5	126	39	47.12	72.6	11	113,967	29.117
1878.....	55.31	98.0	-6.0	35	7	228	38.39	25.5	107	38	49.65	70.2	5	125,793	29.067
1879.....	51.68	99.5	-16.0	48	13	203	32.68	10.3	90	36	40.01	67.1	10	121,768	29.127
1880.....	54.00	101.0	-12.0	41	2	211	32.65	7.0	89	29	40.15	67.9	18	146,039	29.123
1881.....	54.65	101.0	-8.0	68	6	210	33.27	32.5	110	31	47.42	70.1	11	141,430	29.103
1882.....	54.94	105.0	-6.5	40	1	232	27.60	18.0	102	26	45.41	68.6	14	137,736	29.113
1883.....	51.66	96.5	-14.0	26	8	217	40.65	12.5	106	32	45.21	69.7	18	141,161	29.135
1884.....	51.30	98.0	-21.5	29	14	198	43.45	29.0	105	35	47.56	72.6	28	131,188	29.111
1885.....	51.01	96.0	-14.5	27	21	176	36.97	33.0	103	31	41.57	71.3	9	123,013	29.107
1886.....	52.96	105.0	-18.0	53	16	203	21.25	23.5	103	28	39.61	66.5	5	127,769	29.111
1887.....	53.12	102.0	-20.0	40	16	203	33.84	25.0	91	23	40.91	69.8	13	132,367	29.109
1888.....	52.28	99.0	-18.0	28	9	203	41.17	22.0	83	37	42.49	72.2	15	128,135	29.132
1889.....	53.57	91.0	-3.5	6	4	213	43.99	6.0	81	35	43.82	73.2	28	120,230	29.125
1890.....	54.10	100.5	-5.5	43	2	209	36.32	15.5	84	21	42.67	73.8	21	133,589	29.125
1891.....	52.60	93.7	1.0	10	0	211	43.32	22.2	99	39	42.90	79.0	9	134,517	29.113
Mean	52.37	99.9	-11.6	38	8	200	35.86	21.6	100	30	43.99	69.8	12	131,532	29.110

\* Dash (-) signifies below zero.

## MEDICAL COLLEGES.

The following list of medical colleges and examining and licensing bodies is taken from the excellent work on the subject of medical education, published by the Illinois State Board of Health. It is published herein in the hope that it may enable County Health Officers to check, with wholesome effect, the records of persons engaging in the practice of medicine within their jurisdictions.

It is too shamefully true that, owing to the laxity of our laws respecting the regulation of medical practice, the State has become a favorite dumping ground for graduates of schools having a low standard of requirements, and pretenders in medicine of all kinds and degrees, including those who, failing to graduate, or impatient to escape the college curriculum, come west to grow up with the country. Men and women, too grossly illiterate and ignorant to be permitted to engage in the practice elsewhere, find ready asylum here.

One of this class writes us recently, as follows:

“Green castle Sullivan  
county Mo.

“Dear Sir i Would like to know What the laws is in regarde to the practice of medicin in the state of Kansas is a man aloud to practice their With out a certificat from a medical School i have ben tolde that the board of health gave permishon in that State if so when does the board meet and if ican get the endorsement of three practicing physicians Would that do or Would i half to come be fore the board.  
— — —”

It is humiliating to be forced to admit, even to one's self, that this person may engage in the practice of medicine in Kansas as freely and with the same legal protection which would be accorded to an acknowledged master in the divine art.

The toleration of our people in this respect is remarkable, in view of their disastrous experience with this class of medical practitioners. Not only are they tolerated, but receive substantial support and sympathy. The rule of fair play has become consecrated by time and usage with us in the West; but, like other rules, it is abused and often exaggerated. Under the plea that they are being persecuted by the old, established schools of medicine, these charlatans continue to impose on the people, who, in respect of “fair play,” thus speciously presented, have so far defeated every effort toward the regulation of medical practice. The result is demoralizing. A fitting corollary is presented by the long-haired itinerants, with their band wagons and female accompaniments, whose pranks and antics serve to beguile the tedious day.

But, the people are deceiving themselves. “Natural talent and aptitude

may go far toward fitting a man for any calling," quoting from the work referred to, "but no talent can take the place of thorough education, in a profession where such large fields of knowledge are to be mastered, and so many and such important judgments are to be constantly and promptly formed."

## LIST OF COLLEGES NOW IN OPERATION IN THE UNITED STATES AND CANADA.

1. Medical College of Alabama, Mobile.
2. Medical Department, Arkansas Industrial University, Little Rock.
3. Cooper Medical College,\* San Francisco.
4. Medical Department, University of California,\* San Francisco.
5. California Medical College, San Francisco.
6. Hahnemann Hospital College of San Francisco.
7. College of Medicine of the University of Southern California,\* Los Angeles.
8. University of Toronto Medical Faculty, Toronto.
9. Trinity Medical College, Toronto.
10. Royal College of Physicians and Surgeons, Kingston.
11. Medical Department of the Western University, London.
12. Woman's Medical College, Toronto.
13. Women's Medical College, Kingston.
14. McGill University Faculty of Medicine, Montreal.
15. Ecole de Medecine et de Chirurgie, Montreal.
16. Laval University Medical Departments, Quebec and Montreal.
17. University of Bishop's College, Faculty of Medicine, Montreal.
18. Halifax Medical College, Halifax.
19. Dalhousie University Faculty of Medicine, Halifax.
20. Manitoba Medical College, Winnipeg.
21. University of Denver Medical Department, Denver.
22. Medical Department, University of Colorado,\* Boulder.
23. Gross Medical College,\* Denver.
24. Yale University, Department of Medicine, New Haven.
25. National Medical College,\* Washington.
26. University of Georgetown Medical Department, Washington.
27. Howard University Medical Department,† Washington.
28. Medical Department, National University,\* Washington.
29. Medical College of Georgia, Augusta.
30. Atlanta Medical College, Atlanta.
31. Georgia College of Eclectic Medicine and Surgery, Atlanta.
32. Southern Medical College, Atlanta.
33. Woman's Medical College of Georgia, and Training School for Nurses, Atlanta.
34. Rush Medical College, Chicago.
35. Chicago Medical College, Chicago.
36. Hahnemann Medical College and Hospital,\* Chicago.
37. Bennett College of Eclectic Medicine and Surgery, Chicago.
38. Woman's Medical College, Chicago.
39. Chicago Homeopathic Medical College, Chicago.
40. College of Physicians and Surgeons of Chicago.
41. Physio-Medical Institute,\* Chicago.
42. Physio-Medical College of Indiana,\* Indianapolis.
43. Medical College of Indiana, Indianapolis.
44. Central College of Physicians and Surgeons,\* Indianapolis.
45. Fort Wayne College of Medicine,\* Fort Wayne.

46. Indiana Eclectic Medical College,\* Indianapolis.
47. Eclectic College of Physicians and Surgeons, Indianapolis.
48. College of Physicians and Surgeons,\* Keokuk.
49. Medical Department, State University of Iowa,\* Iowa City.
50. Homeopathic Medical Department, State University of Iowa,\* Iowa City.
51. Iowa College of Physicians and Surgeons,\* Des Moines.
52. Iowa Eclectic Medical College,\* Des Moines.
53. Keokuk Medical College, Keokuk.
54. University of Kansas, Preparatory Medical Course,§ Lawrence.
55. Wichita Medical College, Wichita (suspended).
56. The Kansas Medical College, Topeka.
57. University of Louisville Medical Department, Louisville.
58. Kentucky School of Medicine, Louisville.
59. Louisville Medical College, Louisville.
60. Hospital College of Medicine, Louisville.
61. Louisville National Medical College,‡ Louisville.
62. Medical Department, Tulane University of Louisiana, New Orleans.
63. New Orleans University Medical Department,\*‡ New Orleans.
64. Medical School of Maine, at Bowdoin College, Brunswick.
65. Portland School for Medical Instruction,§ Portland.
66. University of Maryland School of Medicine, Baltimore.
67. College of Physicians and Surgeons, Baltimore.
68. Baltimore Medical College, Baltimore.
69. Woman's Medical College, Baltimore.
70. Baltimore University School of Medicine, Baltimore.
71. Johns Hopkins University Medical Department,§ Baltimore.
72. Harvard University Medical School, Boston.
73. Boston University School of Medicine,\* Boston.
74. College of Physicians and Surgeons,\* Boston.
75. Clark University,§ Worcester.
76. Department of Medicine and Surgery of the University of Michigan,\* Ann Arbor.
77. Homeopathic Medical College of the University of Michigan,\* Ann Arbor.
78. Detroit College of Medicine, Detroit.
79. Michigan College of Medicine and Surgery, Detroit.
80. Minneapolis College of Physicians and Surgeons,\* Minneapolis.
81. College of Medicine and Surgery,\* Minneapolis.
82. College of Homeopathic Medicine and Surgery,\* Minneapolis.
83. Missouri Medical College, St. Louis.
84. St. Louis Medical College, St. Louis.
85. Medical Department, University of Missouri, Columbia.
86. Homeopathic Medical College of Missouri,\* St. Louis.
87. Kansas City Medical College, Kansas City.
88. St. Louis College of Physicians and Surgeons.
89. American Medical College,\* St. Louis.
90. Northwestern Medical College, St. Joseph.
91. University Medical College, Kansas City.
92. Ensworth Medical College, St. Joseph.
93. Beaumont Hospital Medical College, St. Louis.
94. Kansas City Homeopathic Medical College,\* Kansas City.
95. St. Louis Hygienic College of Physicians and Surgeons,\* St. Louis.
96. The Marion-Sims College of Medicine, St. Louis.
97. Omaha Medical College, Omaha.
98. Medical Department, Cotner University, Lincoln.

99. Dartmouth Medical College, Hanover.
100. Medical and Surgical College of the State of New Jersey, Jersey City.
101. College of Physicians and Surgeons in the City of New York.
102. Albany Medical College, Albany.
103. University of the City of New York Medical Department.
104. Medical Department of the University of Buffalo.\*
105. Long Island College Hospital, Brooklyn.
106. New York Homeopathic Medical College, New York city.
107. Bellevue Hospital Medical College, New York city.
108. New York Medical College and Hospital for Women, New York city.
109. Eclectic Medical College of the City of New York.\*
110. Woman's Medical College of the New York Infirmary, New York city.
111. College of Medicine of Syracuse University,\* Syracuse.
112. Medical Department of Niagara University, Buffalo.
113. Leonard Medical School,\*† Raleigh.
114. Medical College of Ohio, Cincinnati.
115. Western Reserve University Medical Department, Cleveland.
116. Eclectic Medical Institute,\* Cincinnati
117. Starling Medical College, Columbus.
118. Homeopathic Hospital Medical College,\* Cleveland.
119. Cincinnati College of Medicine and Surgery, Cincinnati.
120. Miami Medical College, Cincinnati.
121. Medical Department of the University of Wooster,\* Cleveland.
122. Pulte Medical College,\* Cincinnati.
123. Columbus Medical College,\* Columbus.
124. American Eclectic Medical College,\* Cincinnati.
125. Toledo Medical College,\* Toledo.
126. Northwestern Ohio Medical College, Toledo.
127. Woman's Medical College of Cincinnati.
128. National Normal University Medical Department,\* Lebanon.
129. Medical Department, Willamette University,\* Portland.
130. University of the State of Oregon, Medical Department,\* Portland.
131. University of Pennsylvania. Department of Medicine, Philadelphia.
132. Jefferson Medical College, Philadelphia.
133. Hahnemann Medical College and Hospital, Philadelphia.
134. Woman's Medical College of Pennsylvania, Philadelphia.
135. Medico-Chirurgical College of Philadelphia.
136. Western Pennsylvania Medical College, Pittsburg.
137. Medical College of the State of South Carolina, Charleston.
138. Medical Depts. University of Nashville and Vanderbilt University, Nashville.
139. Medical Department, University of Tennessee, Nashville.
140. Memphis Hospital Medical College, Memphis.
141. Meharry Medical Department of Central Tennessee College,\*† Nashville.
142. Chattanooga Medical College, Chattanooga.
143. Tennessee Medical College, Knoxville.
144. Hannibal Medical College, Memphis.
145. Texas Medical College and Hospital, Galveston.
146. Medical Department, University of Vermont, Burlington.
147. University of Virginia Medical Department, Charlottesville.
148. Medical College of Virginia, Richmond.

\* Open to both sexes.

† Open to all without distinction of sex or color.

‡ For colored students.

§ Do not grant degrees.

## LIST OF EXAMINING AND LICENSING BODIES.

1. Medical Examining Board of Alabama.
2. Board of Examiners of the Medical Society of the State of California.
3. Board of Examiners of the California State Homeopathic Medical Society.
4. Board of Examiners of the Eclectic Medical Society of the State of California.
5. College of Physicians and Surgeons of Ontario.
6. College of Physicians and Surgeons of Quebec.
7. State Board of Medical Examiners of Colorado.
8. Boards of Medical Examiners of Florida.
9. State Board of Homeopathic Medical Examiners of Florida.
10. Illinois State Board of Health.
11. State Board of Medical Examiners of Iowa.
12. State Medical Examining Board of Minnesota.
13. Mississippi State Medical Association, Board of Censors.
14. State Board of Health of Missouri.
15. State Board of Medical Examiners of Montana.
16. State Board of Medical Examiners of New Jersey.
17. Board of Regents of the University of the State of New York—3 boards.
18. Board of Medical Examiners of North Carolina.
19. State Board of Medical Examiners of North Dakota.
20. State Board of Medical Examiners of Oregon.
21. State Board of Medical Examiners of South Carolina.
22. Board of Medical Examiners, State of Tennessee.
23. Censors of the State Medical Society of Vermont.
24. Medical Examining Board of Virginia.
25. State Board of Health of West Virginia.
26. State Board of Medical Examiners of Washington.



## ABSTRACT OF THE REPORTS OF COUNTY HEALTH OFFICERS.

1891.

No general statement covering the year's labors in health work has been presented by the counties of Atchison, Anderson, Cheyenne, Ellis, Harper, Hodgeman, Kearny, Logan, Neosho, Ness, Norton, Republic, Rice, Riley, Saline, Scott, Stafford, and Wilson. Some of these (Atchison, Logan, Ness, and Wilson) have made annual reports, more or less complete, and the absence of the usual summary statement may be regarded as accidental; while in the cases of Cheyenne, Harper, Kearny, Neosho, Norton, Republic, Rice, Riley and Stafford counties, it may be fairly ascribed to the fact that County Boards of Health were not organized in those counties till very nearly the close of the year, thereby furnishing little or no occasion for reports of any kind.

The counties of Anderson, Ellis, Hodgeman and Scott have thus far furnished no annual reports whatever. They are all supposed to have health organizations.

The counties of Allen, Barton, Clark, Dickinson, Doniphan, Douglas, Elk, \*Gove, Grant, Gray, Hamilton, Jackson, Jefferson, Leavenworth, Linn, Morris, Seward, Sumner and Trego have either never organized their Boards of Health or have ceased to maintain them. They have been reported to the Governor, under advice of the Attorney General, for such action as shall compel them to comply with the law.

## BOURBON COUNTY.

FORT SCOTT, February 10, 1892.

I have delayed sending in my report for the reason that the physicians have not made reports to me. It seems impossible to impress them with the importance of this duty. However, I will do the best I can.

About 100 deaths have been reported to me, but I find from the undertakers and others that there have occurred more than 500 deaths in the county during the past year.

Scarlet fever has been quite prevalent during the year, but in a mild form, there being but few deaths.

Only one death from diphtheria has come to my knowledge.

Malarial fever seemed to prevail during the summer and fall to some extent, though not as severe as usual.

No other epidemic was prevalent, unless la grippe be considered, which has been quite severe during the past three months, nearly every one suffering to some extent with its symptoms, followed in a good many cases by pneumonia, bronchitis, or other lung or throat troubles.

The sanitary condition of this county and city is good, the latter having good natural drainage, and each year sees some improvement in our sewer system.

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\* Board since organized.

We have an abundant supply of good water, furnished by the water-works company, which is filtered, and is much superior to well water in a city of this size.

There are usually from 3 to 10 prisoners in the county jail, and though the building is old, the authorities endeavor to keep it in a clean and healthy condition.

The city last summer passed an ordinance forbidding dead animals from being buried inside the corporation, as there had been some complaint in that respect.

The number of school children in the county is 10,223, and as nearly all children were vaccinated two years ago, during the small-pox epidemic, no attention has been paid to it since.

Our dealers in ice, milk and meat are intelligent and honest, and their products are noted for their purity.

R. ATKMAN, M. D., *County Health Officer.*

#### BUTLER COUNTY.

EL DORADO, January 27, 1892.

I have endeavored to make my report as thorough as possible, taking into consideration the material at hand. At your suggestion, I had published in the daily and weekly papers of our county the circular letter from the State Board of Health, of September 25, 1891, in reference to those concerned in making proper returns of births and deaths. I also had a copy of the letter mailed to the address of each registered physician and midwife in this county, informing them that on and after November 15, 1891, those failing to comply with the provisions of the law would be prosecuted. As yet, I have no cause to institute legal proceedings, but will certainly do so if the occasion presents.

As to the sanitary condition of the county since my last report, will say it has been fairly good. A few cases of scarlet fever of the mild form were reported from various parts of the county during the latter part of the year, but no fatal cases up to this date. Of course, we have had our usual amount of malarial troubles, but, upon the whole, we have had no reason to complain.

J. A. MCKENZIE, M. D., *County Health Officer.*

#### BROWN COUNTY.

HIAWATHA, February 1, 1892.

Since November, when an effort was made to secure more complete vital statistics, there have been reports from half the physicians of the county.

There has been no general epidemic, except the prevalent "grippe," which has been severe in most parts of the county, and fatal in cases of old persons. Some scarlet fever was reported from two localities, and diphtheria in three, with some fatality, but care has been taken to prevent spreading, and the diseases have not become serious in any locality.

Some attention is given to vaccination. The rules in respect to isolation and placarding of infected premises are observed. We have no isolation hospital. Garbage and slops are collected and fed to swine, for the most part. We have no running streams.

The general sanitary conditions are good, and no complaints have been made of nuisances. The cities have shown a commendable zeal in keeping streets and alleys clean of filth. Privy vaults are far too common, and often in dangerous proximity to sources of water supply from wells. A higher education of the masses in the elements of sanitary science is needed before reforms in these matters can be made general.

S. M. PRATT, M. D., *County Health Officer.*

## BARBER COUNTY.

MEDICINE LODGE, January 1, 1892.

I have no statistical reports to present for the year 1891, as our Board of Health has only recently been organized. I have distributed the blanks among the physicians and midwives, and think everything is now in good shape. Have had some reports already.

We have had la grippe, but not to an alarming degree, so far; and some cases of typhoid fever of a mild type—three in one family.

Rheumatism and malarial fever have been the prevailing diseases.

The sanitary condition of the public buildings is generally good. Some of our school-houses are primitive, and our jail, being in the court house basement, is damp and unhealthy. We have no house for the poor.

Our streams are being contaminated, and due attention is not given to the control of slaughter-houses. No large dairies, but there should be an inspection of the milk. Ice supply good. There is an offensive cess-pool in the southern part of this city, in which the sewers empty; it should be abated.

No general attention is paid to vaccination.

J. D. KAER, M. D.,  
*County Health Officer.*

## CHAUTAUQUA COUNTY.

SEDAN, January 1, 1892.

Pneumonia, typhoid fever, malarial fever and la grippe have been the prominent diseases. The county in general is in good sanitary condition, with the exception of the village of Elgin, near which is a large stagnant pond.

The county is sparsely settled. No dairies. Manufactured ice is used. No attention is paid to vaccination, because, during the small-pox outbreak of last winter, nearly every person in the county was vaccinated. The physicians have come to look upon the law requiring them to report as a dead letter. They do not report at all well, and pay no attention to my requests for their registration.

Am making every effort to bring my county up to the standard, but so far without success. However, I am not disheartened, but will continue to serve the county to the best of my ability.

The undertakers are reporting very well.

I investigated a complaint from the village of Elgin recently. Found four families were using water from a certain dug well, and that members of each family had died with a fever resembling typhoid. Only those using that water were affected. I forbade its use until an examination could be had. The excretions were not disinfected, but carelessly thrown on the ground. I have a sample of the water. Shall I send it to you for examination?

The pond referred to is one-third of a mile south of Elgin, in the Indian Territory, and consequently beyond the jurisdiction of the State.

W. T. CARTWRIGHT, M. D., *County Health Officer.*

## CHASE COUNTY.

COTTONWOOD FALLS, January 31, 1892.

I regret being unable to make a more complete report of births, deaths, and marriages, but those whose duty it was to make the returns have failed to do so, with but a very few exceptions. Since the circular letter was issued, the returns have been more numerous, especially from county physicians; but I still think, as stated in a former report, that some way will have to be provided, other than depending upon the local Health Officer, to make reports of delinquents, before the

vital statistics of our State can be brought to the degree of perfection contemplated by law.

I am gratified to be able to make report of a good condition of health in our county for the past year. There have been no epidemics or endemic outbreaks of malignant disease, excepting la grippe, which has been prevalent throughout our county, especially in the towns. It has not assumed so fatal a form as heretofore; in fact, I do not know of a single death resulting from this cause, although fully one-fourth of our population has been affected. There have been a few isolated cases of diphtheria.

Our water supply is generally found in magnesia limestone rock, and is heavily loaded with the carbonates; consequently is productive of urinary disease to some extent. Many are constructing cisterns for this reason, with good results. Our ice and milk supplies are good.

Our school-house and jail are well-constructed buildings, adapted to their purposes, well ventilated, and well kept; with a good water supply, and plenty of room. The average number of prisoners will not exceed two. Their food is wholesome and abundant. We have as yet no poor-house, but a tax was levied last season for the purpose of establishing one.

C. E. HAIT, M. D.,  
*County Health Officer.*

#### CHEROKEE COUNTY.

COLUMBUS, January 21, 1892.

I met the Board of County Commissioners at their regular session in this month, and we organized as a Board of Health. I have had 3,000 blanks printed, after the style of those you sent me, and have placed them in the hands of almost all the physicians of our county. Reports are beginning to come in now. It is possible that our report will not be complete this year; but we will have it quite reliable, I am sure.

As to a Board of Health for our city, I don't know whether we will be able to get one or not; will do my best.

I have the promise of the leading physicians at Weir City and Galena to work the matter up as to those cities, and will write you the result as soon as possible.

J. H. BAXTER, M. D., *County Health Officer.*

#### COWLEY COUNTY.

WINFIELD, January 1, 1892.

There have been no prevailing diseases, except la grippe, which appeared about the first of December, and has extended rapidly throughout the county. I wrote all the physicians in the eastern part of the county, as you suggested, and learned that there had been three cases of diphtheria, but all had recovered, and the disease had not extended.

My reports are not very satisfactory. I went before the County Commissioners yesterday and stated the situation to them. They passed a resolution and ordered it published, that all the physicians must make returns, and the county attorney was directed to prosecute all failing to do so. I presume, therefore, we shall hear something from somebody before very long.

In the cities, the garbage and slops are gathered by scavengers and fed to hogs, and this is the usual course followed in the county.

The slaughter-houses are well kept. No large dairies. No complaints as to milk or ice supplies. Manufactured ice largely used.

Attention is paid to isolation and placarding of inspected premises. An old, iso-

lated building was used when we had use for an isolation hospital, and was afterwards burned.

The school children have been systematically vaccinated several times in the past few years.

GEO. EMERSON, M. D., *County Health Officer.*

#### CLOUD COUNTY.

CONCORDIA, January 10, 1892.

I am sorry to say that reports from physicians and midwives, for the last year, have been an utter failure. I have distributed circular letters to all of both classes, as requested, naming January 1, 1892, as the date on which they must begin to report upon all cases of the various kinds required by law. I think, perhaps, they will do better than formerly. I have failed so far to get the mayor and council to organize a municipal Board of Health in this city.

The sanitary condition of the county in general is fairly good, though not as it should be. Our County Commissioners are utterly indifferent about health matters, and seem to think, in their wisdom (?), that a health board is the height of nonsense—an uncalled-for expenditure. I have tried in vain to get them to organize according to the plan laid down by the rules of the State Board, but their apathy is astounding. No interest is manifested in the matter except when I present my voucher for pay; then, in my absence, they cut down or reject my claim altogether. Thus far I have succeeded in getting a rehearing, and by force of persuasion, and the influence of some of the more considerate and justice-loving, I have obtained the small amount of the insufficient pittance allowed. In my last contest with them (my bill having been cut down over three-eighths), I made this proposition: "If you will allow my bill in full, I will step out: and if you can get any other man to take my place for the same or less, you are at liberty to do so. I will not hold the position another year for less than \$200, guaranteed by articles of agreement." My bill was allowed in full, and another man elected in my place, at \$80 a year.

My experience for the last seven years, as Health Officer of a local board, is, that if the commissioners of the various counties of the State, who are constituted by law local Boards of Health, are as indifferent and uninterested as the county board of Cloud county, the sooner they are disposed of as a health board the better it will be for the cause of public health and sanitation in the State of Kansas. I have been convinced for several years that the wheels of progress in this line have been clogged by these county boards. I know it is the case in this county, and I have heretofore recommended that the law be so changed as to entirely dispose of them, and put the matter into the hands of one or more persons, whose duties and remuneration shall be made specific. Then, and not till then, will sanitary conditions prevail, to the general interests of the State. I still hope that our next Legislature will become interested enough in the matter to so amend the laws that they will be more thorough and specific in all their relations to this matter. The idea of the law constituting the County Commissioners of each county a local Board of Health, and making it their duty to elect a Health Officer, on whom all the duties and responsibilities of the office depend, and then leaving him at the mercy of the Commissioners (who have no interest whatever in the subject) in the matter of his compensation, is against the best interests of the cause.

I would be glad to see the matter pushed to a success, and the best of health rules and regulations secured, but I have little hope under the present condition of things.

L. D. HALL, M. D., *County Health Officer.*

## COFFEY COUNTY.

BURLINGTON, February 1, 1892.

The sanitary condition of the county was good until about November 1st, at which time a disease resembling scarlet fever became quite prevalent in towns and country, affecting children only, from 1 to 14 or 15 years of age. This outbreak continued through November and December, during which time a large number of adults became affected with tonsillitis and sore throat.

Chicken-pox also appeared in December and was quite prevalent. The fatality among these diseases was quite slight, but one death occurring.

The cities of Le Roy and Waverly are in an unsanitary condition through defective drainage.

We have one slaughter-house, which is a nuisance.

Infectious or contagious diseases among strangers or non-residents are treated in some old, unoccupied building.

Ice and milk supplies good. Our streams are being polluted, without doubt. Attention is paid to vaccination.

WM. MANSON, M. D., *County Health Officer.*

## CRAWFORD COUNTY.

GIRARD, January 8, 1892.

La grippe has been the prevailing disease.

No complaints made of the sanitary condition of our public buildings. Our jail and county poor farm are visited by the County Commissioners quite frequently. The general sanitary condition of the county is good.

I know of no particular locality which is in an unsanitary condition. Garbage, slops and household wastes are removed outside of the cities.

No special contamination of our streams. Ice and milk supplies good.

No particular attention has been paid to vaccination recently.

WM. H. WARREN, M. D., *County Health Officer.*

## CLAY COUNTY.

CLAY CENTER, January 6, 1892.

The number of births compared with 1889 shows a slight falling off. In my opinion, there have been fewer births in this year than in 1889. Perhaps not more than 20 per cent. of the births of the county are reported.

The number of deaths of 1891 shows an increase over 1889 of 31 per cent. The report of deaths may be said to be full, and have been since the undertakers commenced to report.

The number of marriages of 1891 shows an increase over 1889 of 21 per cent. This report is full. Our probate judges have been faithful in returning.

No instances have come to my knowledge of the spread of contagious diseases.

The general sanitary condition of our public buildings is good. There is room for improvement in the arrangement of our jail.

The year 1891 has afforded more than the average amount of sickness. An epidemic of la grippe, the last few weeks, has largely contributed to the sick list, and also to the death list.

*Suggestions.*—(1) Have the undertakers' returns to more nearly correspond with the physicians'. Frequently but the initials are given, which is practically equivalent to the sex not given. I think they might have, in addition to what they now have, sex, social condition, color, occupation, etc.; as I think the party coming after the burial casket can give these more definitely than he can the prognosis of the dis-

ease. (2) Have a place on the new return blanks for births and deaths for the number and date of filing.

SAM. E. REYNOLDS, M. D.,  
*County Health Officer.*

## COMANCHE COUNTY.

COLDWATER, January 13, 1892.

I believe this year's report is nearer complete than any heretofore made from this county. It is entirely reliable.

Ours is a remarkably healthy county, and, so far, free from epidemic or endemic disease, except la grippe.

J. S. HALLIDAY, M. D.,  
*County Health Officer.*

## DECATUR COUNTY.

OBERLIN, January 6, 1892.

While my report for 1891 is not complete, it approximates thereto more closely than ever before; and, as I have the hearty coöperation of the Board of County Commissioners and am getting after the delinquents, I hope to attain excellence, if not perfection, in the future.

The health of the county has been good during the year, although we have had a wet season, favorable to diseases. We have had five cases of scarlet fever, which were of mild type. They were duly quarantined and the premises disinfected. No extension of the disease occurred. One family has had typhoid fever. A member of the family came from Denver with the germ in his system, and from him the disease has spread to the entire family.

The sanitary condition of all public buildings in this city and county is good. We have not been visited by any epidemic during the last year. Decatur county is a natural sanitarium, and is already attracting attention from all quarters of the globe as a health resort. I have resided here for 12 years, and, though not here solely for my health, have been so situated as to observe carefully the extreme healthfulness of the locality, which has so far exceeded my early expectations in that line as to be a disappointment, from a mercenary stand-point. With an altitude of 3,000 feet, and the total absence of malarial taint, the arid air of this region is as the breath of life to the invalid. It is the banner health county of the State, and the people are beginning to find it out. We venture the assertion that, taking the year throughout, there can be found no place in the United States so acceptable to the invalid as here.

W. B. MEAD, M. D., *County Health Officer.*

## ELLSWORTH COUNTY.

ELLSWORTH, February 5, 1892.

It is with considerable reluctance that I am compelled to admit that any report made by me, relative to the general sanitary condition of this county, cannot be considered as absolutely correct. The knowledge of any facts I may state is gleaned from personal observation only, and that means of obtaining information falls very short, when the condition of the entire county is brought under consideration.

It is greatly to be deplored (if it is hoped to make statistics reliable), that cases of infectious and contagious diseases are not reported to County Health Officers. Those cases which terminate fatally come to his knowledge through the undertakers' reports, and, consequently, but a wide approximate ultimate estimate of their spread, and their rate of mortality, can be thus arrived at.

Diphtheria, during the last year, has been unfortunately prevalent, and in a virulent form, 14 deaths from that disease having been reported. The outbreak in some localities would seem to be sporadic, although I believe all cases can be traced to some source of infection. It would appear certain that the contagium of

the disease retains its vitality for years, and that unless thorough disinfection of all and everything appertaining to those places where the disease has once existed be practiced, it will, sooner or later, manifest itself again, often after the previous outbreak has been almost forgotten. More strenuous efforts should certainly be made to insist upon more thorough disinfection of infected dwellings, as well as a more rigid enforcement of quarantine. Were these measures carried out as they should be, we might hope, at least, to reduce to a minimum the outbreaks of this dread disease.

There have been a few cases of typical typhoid fever in this county during the past year, and several cases of typho-malarial fever. The latter, although in many respects resembling the true typhoid, do not exhibit the abdominal symptoms, and I believe the source of infection to be miasmatic, and that the stools do not contain the germs of the disease. The comparative immunity from typhoid fever we enjoy in Ellsworth can be justly attributed to our excellent system of water-works, rendering infection through that most frequent channel almost impossible.

H. O'DONNELL, M. D., *County Health Officer.*

#### FRANKLIN COUNTY.

OTTAWA, February 5, 1892.

I regret to have to make a report for publication, because of the absence of data for the past year. Our county board did not really organize until the 16th of January, this year. However, we want the State Board of Health to know that Franklin county is alive to the necessity for sanitary work, and, with renewed energy, will, we trust, make a fuller report for 1892.

The County Commissioners are interested, and ready to aid me in carrying out measures for the suppression of disease and for the benefit of the public health.

The sanitary condition of the school-houses and public buildings is good, excepting the county jail, and we will soon have that remodeled, thereby correcting that defect.

The health of the county has been good, although during the last three months we have had an epidemic of la grippe, and where it has attacked old persons it has proved fatal in many instances. There have been a number of deaths from age rather than disease, though hastened, perhaps, from colds. A few cases of scarlet fever were met with, but small fatality; and there need not have been so many cases had the persons been informed in regard to the danger of "scarlet rash."

The water of our county is good, and the drainage unusually good. If I could impress it upon the minds of the people to use boiled water for drinking purposes, I believe it would be beneficial, but when it "moveth not itself in the glass," it is considered safe.

Our system of water-works in Ottawa consists of large wells. This water is conveyed in iron mains, which serve to neutralize the alkali; but this water is not generally used for drinking purposes unless it is well filtered.

We have an excellent sewer system, and it is being more generally made use of each month, and the nuisances gradually removed.

The marriage report was not kept by the probate judge, but I took this from the records as best I could: Total, 195; and only seven grooms under 20. The majority were between the ages of 20 and 25 years, which makes a very sensible showing in this respect.

Hoping the public and the physicians will rally to the support of any such laws and requirements as will build up the profession and benefit the general public, I am,

R. S. BLACK, M. D., *County Health Officer.*



## FORD COUNTY.

DODGE CITY, January 14, 1892.

We have had no cases of continued fever in the county during the past year, except those that came here sick from other places. We have had a number of cases of whooping-cough; also, two cases of diphtheria, which were caused by filth accumulating in cess-pools, under a residence, and a few cases of scarlet fever of a mild type.

Our county is becoming more prosperous, and somewhat more populous. The people now here are fairly well satisfied, and we hope in the future to have less trouble than formerly in getting our reports.

We are glad to note the earnestness with which the State Board is working, and feel confident you will make a good showing, considering the odds against which you must necessarily contend, until we can have more good sanitary legislation.

T. L. McCARTY, M. D., *County Health Officer*.

## GRAHAM COUNTY.

HILL CITY, February 16, 1892.

I herewith submit the annual reports, which are as meager and unsatisfactory to me as doubtless they will be to you. But it is the best I can do, under the circumstances. Undoubtedly there have been more births and deaths than are herein reported. Owing to the control exercised over the County Health Officer by the County Commissioners, the office has fallen into bad shape. Two years ago it was in good running order, when I was superseded by Doctor A., who left the county six or eight months afterwards, and nothing has ever since been found of the books and records. I was again appointed, under promise that I would be paid for my services, and did receive the munificent sum of \$12.50 in county scrip, at 20 per cent. discount, for my services up to January 1, 1892.

If you could impress upon the minds of our County Commissioners and county attorney the importance of having a Health Officer in this county, and give them to understand it is an office which requires time and labor, it might be some one would be appointed who would take an interest in the work. They have never given me anything like a fair chance to do what is required of the Health Officer.

This is a good county, and deserves a much better report than it has ever had.

B. P. WILLIAMSON, M. D., *County Health Officer*.

## FINNEY COUNTY.

GARDEN CITY, February 8, 1892.

There have been no prevailing diseases, in the strict meaning of the term, and no contagious or infectious diseases. The sanitary condition of the county is good; no complaints. I know of no locality whose condition is unsanitary from any cause. Garbage and slops are usually removed beyond the city limits. Our streams are not being polluted. The ice and milk supplies are good. Some attention is given to vaccination.

GEO. L. NEAL, M. D., *County Health Officer*.

## GREELEY COUNTY.

TRIBUNE, January 1, 1892.

La grippe has been the prevailing disease, but we have had a few cases of whooping-cough, dysentery, and typhoid fever, attended by no fatality.

The sanitary condition of the public buildings and county in general is good; excellent health has prevailed.

Slops and garbage are fed to swine. Our streams are not being polluted to any marked extent. The ice and milk supplies are good.

We have a building set apart for the treatment of infectious and contagious diseases, but have never had occasion to use it.

Very little attention is given to vaccination.

F. R. MOORE, M. D., *County Health Officer.*

#### GEARY COUNTY.

JUNCTION CITY, January 6, 1892.

Since my appointment as Health Officer, April 17, 1891, there has been nothing worthy of note brought to official notice. No epidemics or contagious diseases have prevailed. There have been a few isolated cases of scarlet fever and whooping-cough.

My reports are complete, so far as returns of marriages and burial permits are concerned. The returns of births show that there have been fewer births than deaths, which is misleading. I account for it in this way: In the country precincts, in cases of confinement, they have no medical attendant if it can possibly be avoided; consequently, those cases are not reported, while the burial permits report all the deaths.

A few of the physicians report all cases; a few report births, but not deaths; and some make no report at all; in fact, never have paid any attention to the law.

GEO. E. HARVEY, M. D., *County Health Officer.*

#### GREENWOOD COUNTY.

EUREKA, February 1, 1892.

The physicians of this county make their reports very fairly, but not up to the law. The marriage reports are very fair, the probate judge sending out a blank report with each license, which is returned to him, and he in turn transmits them to this office.

I have had only one case of a contagious nature in the year, and that was diphtheria, which was isolated, and recovered; no other case of a like character followed. Malarial cases, also la grippe, are very prevalent. Among old people the latter was fatal, but young people recovered after rest and suitable treatment.

Our water supply is very bad. One great cause is, that slaughtering houses are situated above the works, and all the offal is cast into the river. Our Board of Health is trying to abate this.

Our ice for the year was a failure, so no disease could be charged to that cause. The ice used here last summer was manufactured.

The law in relation to births ought to be amended, as no physician can give the name of child at birth for obvious reasons. A number of deaths, as well as births, are never reported, for the reason that no physician has been in attendance.

The undertakers are reporting fairly well.

F. W. WATSON, M. D.,

*County Health Officer.*

#### GARFIELD COUNTY.

RAVANNA, January 1, 1892.

This county has enjoyed its usual immunity from disease during the past year, and very few cases requiring medical aid have occurred. Two deaths, one of which was an infant; a number of births, of which but one was reported; and one marriage, is the extent of my report.

This county is beginning to recover from the collapse following the boom of 1886-'87, which caused fully 75 per cent. of our population to leave. The present

inhabitants of our county are a healthy and, withal, a thrifty and prosperous people, given to agricultural and pastoral pursuits.

While my confreres elsewhere may have large disease and death lists to report, I am happy to say that our people have overcome their old chronic diseases, which caused them to seek these healthful plains; and, as regards acute diseases, we are well-nigh exempt. Our aged people feel younger, our men and women stronger, and the children grow up like sunflowers.

HENRY C. SUESS, M. D.,  
*County Health Officer.*

#### HARVEY COUNTY.

NEWTON, January 21, 1892.

The year has been exceptionally healthy throughout the county. One death from measles, two from diphtheria, three from whooping-cough, four from enteric fever, and one from dysentery. No contagious diseases have visited us; nor have the public schools been interrupted through any disease. The water supply is plentiful and quality good. Public buildings are in good condition. There have been no cases of small-pox in the past year; consequently vaccination has been very limited.

G. D. BENNETT, M. D., *County Health Officer.*

#### HASKELL COUNTY.

SANTA FÉ, December 31, 1891.

Intermittent fevers, la grippe, asthma, pulmonary tuberculosis and typhoid fever have visited the county in the past year.

The sanitary condition of our public buildings and county generally is good. Slops fed to swine; garbage burned. Our streams are unpolluted to any marked degree. No slaughter-houses in the county, and no dairies; no ice gathered. The county physician takes charge of strangers or non-residents affected with contagious disease. No building specially provided for this. No attention paid to vaccination.

J. P. COWDIN, M. D., *County Health Officer.*

#### JOHNSON COUNTY.

OLATHE, January 12, 1892.

There have been but two or three cases of scarlet fever reported to me during the year; one death. One other case was brought to this city by a child visiting here, which I reported to you at the time. No extension of the disease from this case. The health of the county, so far as I have had opportunity of ascertaining, has been most excellent. All our public buildings are the very best, and are well kept; the house on the poor farm being the only exception. We hope, ere long, to have a better building; but even now the inmates seem to be comfortable and well cared for. There has been no spread of any disease from our schools, churches, funerals, or other public gatherings.

C. G. MCKINLEY, M. D., *County Health Officer.*

#### JEWELL COUNTY.

MANKATO, January 20, 1892.

Diphtheria has prevailed somewhat extensively in the townships of Burr Oak, Walnut, and White Mound, attended by some fatality. To meet the condition, a Board of Health was appointed in the city of Burr Oak and the disease has abated.

The sanitary condition of the public buildings, and of the county generally, is good, with very few exceptions. Some of our streams are contaminated by the wash from feeding-lots. The slaughter-houses are kept in good condition. The ice and milk supplies are pure.

We have no building specially assigned to infectious or contagious diseases. The sick are treated wherever they happen to be. But very little attention is paid to vaccination.

WALTER CREW, M. D., *County Health Officer.*

#### KINGMAN COUNTY.

KINGMAN, January 23, 1892.

I regret exceedingly that my reports are not more full and complete, but such has been the nature and lack of returns from the field, as to utterly preclude the possibility of making proper returns. I have endeavored to do the best I could with the material at hand. I sent out the circulars that you sent me, and ordered that all reports must be made within proper time, but some of the doctors will not report deaths, although willing to report births. They seem to think it gives them away to report a death. I have organized the new Board of Health, and I think the present Commissioners will take more interest in sanitary matters. A resolution was passed at our last meeting, and published in the official paper of the county, that any person found guilty of violating any of the sanitary provisions of the law of the State would be prosecuted to the full extent.

I shall try to get the Board to pay me more for my services this year, that I may devote time enough to the office to result in some good to the county. I am satisfied that almost all the cases of typhoid fever, diphtheria and scarlatina are caused from filth and bad water combined; especially from bad water. I think if it were possible to have some one inspect the wells in the county, and have decaying well curbs removed, and the wells cleaned, pig pens and cattle yards removed to a proper distance from wells and premises, and good, pure water supplied to every family, those diseases would become a thing of the past. I intend to look after these things this year more than heretofore, and hope to make some improvement in the sanitary condition of the county.

The health of the county has been good during the past season. No special disease, except la grippe, which has been very prevalent here for the last six weeks, and still continues. However, there are few fatal cases.

E. W. HINTON, M. D., *County Health Officer.*

#### KIOWA COUNTY.

GREENSBURG, February 5, 1892.

My report for 1891 must be very meager, from the fact that this county was without a health organization until December, 1891.

The prevailing diseases for the year were la grippe, malarial fever, dysentery, and chicken-pox; but, fortunately, they brought no fatality.

During the year 15 deaths have occurred (all owing to accident or chronic affections), 20 births, and 11 marriages. The sanitary condition of the county is good.

J. A. MILLIGAN, M. D., *County Health Officer.*

#### LABETTE COUNTY.

MOUND VALLEY, February 3, 1892.

The physicians are now generally making reports, with the exception of only some five or six. One undertaker has yet made no report, but has promised to do so; while two have made only partial reports.

In October the State Board of Health supplied this office with printed circulars or letters in regard to the making and collecting of reports from physicians, one copy of which was mailed to every physician and midwife in the county. This led to a voluminous correspondence, but we hope the matter is at last understood.

I congratulate the State Board of Health upon the new blanks for the reports of physicians and undertakers, as they are much lighter, can be more easily carried by the physician, and are not so formidable in appearance: and are, in fact, simpler and better in every way.

The usual diseases to which our county is subject have prevailed in much the same ratio as in former years. Early last year, scarlet fever was introduced into the county from some direction, and has, as yet, not been altogether stamped out, having existed in some portion or school district of the county, sometimes in a very mild form (called "scarlet rash"), almost the entire year.

During the month of September, diphtheria began to be reported as occurring in the city of Parsons, and has continued to date in that city. So far, it is almost entirely confined to that place, only some two or three cases occurring in neighboring towns and surrounding country.

I forwarded copies of the pamphlet on that disease, as issued by the State Board of Health, to the press of the cities of Parsons, Oswego, and Chetopa, requesting them to publish the same for the good of their communities. The *Parsons Palladium* complied with the request, but cannot say as to the others; I have not observed it.

Our county, in common with the rest of humanity, has to a very large extent suffered from the presence of the influenza, or la grippe; very few families or persons escaping from its effects in some form, many being affected very severely. But thus far we have been much more fortunate, as to its fatality, than many other sections of our country. However, we do not doubt its baneful effects will yet be felt by many a poor sufferer, and even the death rate of our county will be affected by it for some months to come.

I feel that I should not close this report without commending our Board of County Commissioners—the County Board of Health—who have all taken a lively interest in all sanitary questions connected with or for the county. They have rendered the County Health Officer every assistance in their power, and have been ready to heartily second all the efforts of the State Board of Health in carrying out all the provisions and purposes of the State law.

They took a great interest in trying to stamp out scarlet fever, last summer and fall, calling for and distributing the printed material furnished by the State Board for that purpose in the school districts and neighborhoods affected with the disease, and directed that the county school superintendent be supplied with pamphlets on the different infectious diseases, for distribution in any school district requiring the same.

The board, and our county attorney, have fully decided to enforce the law against every physician and midwife who persists in refusing to make reports, and some cases are now arranged to commence proceedings against, which will test the law on that subject.

L. T. STROTHER, M. D., *County Health Officer.*

#### LINCOLN COUNTY.

LINCOLN, January 2, 1892.

Influenza and pneumonia have been the prevailing diseases, but we have had some few cases of typhoid fever, and two deaths from that cause.

The court-house and jail buildings are about as unsanitary as it is possible for them to be. The school-houses are in pretty good condition.

Nearly all the streams in the county have been more or less contaminated by manure and dead carcasses.

The butchering establishments are kept reasonably clean. The milk supply is good. The ice is gathered mostly from polluted water. No attention is given to vaccination.

HENRY M. HALL, M. D., *County Health Officer.*

LANE COUNTY.

DIGHTON, January 8, 1892.

My annual report for the year 1891 is not as complete as the report for last year, our physicians being more negligent than formerly in regard to sending in reports of births and deaths. Only one midwife has sent in any report during my term of office, more than three years.

The number of deaths reported during the year is 22; number of births, 19; number of marriages, 8. Of the deaths, two were from consumption, and three from typhoid diseases. The number of deaths is probably complete (six less than last year), and is obtained from the undertaker's records. Our undertaker does his duty in the matter, but the causes of death, as given to him, are not correct in all cases: so that, in those cases not reported by the physicians, the cause of death is left in doubt.

The number of marriages is not complete by reason of the probate judge getting out of blanks, without my knowledge.

I have consulted with the county attorney, and, with his assistance, the reports for the present year will probably be more nearly complete. No one refuses to make reports; in fact, they all promise to do so, but fail to keep their promises.

There have been no epidemics of contagious or infectious diseases, except la grippe, and in fact the health of the county, the past year, has been good.

F. L. ROWND, M. D., *County Health Officer.*

LYON COUNTY.

EMPORIA, January 5, 1892.

I will refrain from an attempt at making a formal or complete annual report to the State Board of Health from Lyon county. The physicians, and others authorized to make returns, have almost entirely neglected their duty in the county during the last year. Under the direction of the circular recently sent out by the State Board, I have been trying to place the work on a satisfactory footing for the year 1892, and am glad to report that I have met with results that are very promising. The doctors, and others, have promised complete returns after January 1, 1892.

In a general way, I can report that the past year has not been characterized by the outbreak of any epidemic disease of any nature. Throughout the year, there have been sporadic cases of scarlatina, found alike in all parts of the county. Also cases of diphtheria, some of them very severe and fatal, have been reported during the year in the city and county. During the summer and early autumn typhoid fever prevailed. The probable cause of this was the hot, dry weather following the unusually wet spring and early summer.

This brief and imperfect report is respectfully submitted with the hope that our next annual report will be more creditable.

T. C. BIDDLE, M. D.,  
*County Health Officer.*

MARION COUNTY.

PEABODY, January 15, 1892.

While I am still unable to make as complete a report as I could wish for the past year, I am happy to say there has been a marked improvement in the matter of reporting births and deaths, and also that other vital statistics have received more careful attention than heretofore from the physicians of our county. However,

there are 8 or 10 doctors who still persist in—I cannot say defying the law—but in violating it, by not reporting vital statistics of any kind to the County Health Officer. I think this arises from their not inquiring into the matter carefully enough to become sufficiently interested to do their part towards securing for our county and State better sanitary laws. I shall be sorry if it becomes necessary to bring suit against any of these physicians, because some of our best men are among the number.

The general health throughout the county for the past year has been comparatively good. Yet we have no means of knowing, to a certainty, as none of the physicians have reported the number of cases treated. But judging from the returns of deaths and the local reports, we have enjoyed, upon the whole, pretty good health.

In the northern part of the county, scarlatina and diphtheria appeared, but did not extend very far and were soon checked. A few miles from Peabody, a family of seven children had “scarlet rash.” They were at once quarantined, and I have knowledge of but one other family having the disease, and it was two townships removed from the one first mentioned.

We have had a good many cases of malarial fever, with about the same mortality as of former years. Typho-malarial fever has prevailed to some extent in some localities, but not in an epidemic form, and comparatively few deaths have been reported from that cause.

Whooping-cough and measles were quite prevalent in the northern part of the county during the spring months.

In December, la grippe made its appearance in the form of catarrhal fever, and while the patients were severely ill, few fatalities marked its course.

It is still a matter of regret with us, that so far we have failed to enlist the aid and interest of our County Commissioners in this work. As remarked of the physicians, the cause of their indifference lies in the fact of their not comprehending the importance of having good sanitary laws, and that to obtain these laws a careful record of all vital statistics must be made. I will endeavor to meet with the Board of County Commissioners at their next annual meeting, and give them an idea of the importance of their hearty coöperation in this work.

As soon as physically able, I will get the names of all delinquents, and such cases as will serve best to proceed against, for their neglect or violation of the few sanitary laws we already have.

The old order of reporting gave each physician and midwife 30 days in which to report. Many, not being aware of the change in favor of more prompt reports, are still late in sending in their statistics, which will account for the changes I have been obliged to make. I have received a number of birth and death reports for last year, since I completed the annual report; while a few others, yet to come, cannot be incorporated in the annual report of 1891.

We sincerely hope all these defects will in time, be overcome.

C. A. LOOSE, M. D., *County Health Officer.*

#### MIAMI COUNTY.

OSAWATOMIE, JANUARY 25, 1892.

My reports are all very incomplete, except the return of marriages. It seems to be impossible to get all the physicians of the county to report. Some report very promptly, while others do not report at all.

The other members of the County Board of Health do not seem to take any interest whatever in the health of the county, or its statistics, and it is very hard for an *ex-officio* member of the board to do anything without their assistance.

E. C. PACE, M. D., *County Health Officer.*

## McPHERSON COUNTY.

McPHERSON, January 15, 1892.

There has been a marked improvement in the matter of reports from the field to this office during the year just passed, and especially since the new effort at enforcing the law went into operation. Reports of births and deaths have been received from all the physicians and accoucheurs but one, and I have not been able to ascertain as yet whether his failure to report has been from neglect, (willful or otherwise,) or whether no births or deaths have occurred in his practice during the past year. I apprehend that hereafter we shall be able to make our returns from this county quite full and complete.

The general sanitary condition of the county is very good; in fact, I am not aware of a single locality that could be justly reported otherwise. Our citizens generally have enjoyed good health, with, of course, a moderate amount of illness. Within the past month there has been considerable complaint of influenza, not differing, however, very widely from the usual colds of the season. A few cases have been severe, especially with people of advanced years, but our rate of mortality has not been materially increased by it. The question often arises: What can be done to ward off these attacks of influenza? It has not yet been satisfactorily answered. We shall be glad to hear from the field on this subject. Our County Commissioners and county attorney are in hearty sympathy with the State Board in its efforts to enforce the law, and will render me every assistance necessary in my efforts to make McPherson a banner county in this respect, as it is my purpose to do. We anticipate no trouble beyond a careful, vigilant oversight and management of the health affairs of the county.

We shall be glad to have any suggestions or instructions the Board may see fit to give.

J. E. ROUZE, M. D., *County Health Officer.*

## MITCHELL COUNTY.

BELOIT, January 27, 1892.

My appointment dates from July, 1891, and my report, therefore, is for the last six months only.

As a rule, the physicians report promptly and cheerfully. Only a very few have refused.

It is claimed the law should allow a fee for each return, if only 10 cents. It seems to me, if such a fee, or any fee for that matter, were to become the only incentive, the moral effect would be bad. These returns should be sent in from a broader and nobler purpose than that of complying with the letter of the law, whether good or bad. I do not think any good physician should take advantage of a poor law.

A better plan would be to show wherein the present law is defective, by a cheerful and faithful compliance with the spirit of an ideal law.

Our County Commissioners have made a commendable effort to have the law made operative in this county, and by another year, unless all signs fail, it will be well-nigh accomplished.

The undertakers of the county, led by J. H. Roberts, Esq., of Beloit, render willing and efficient service. Our probate judge, Hon. J. C. Birt, has not failed in a single instance to make marriage returns.

Of course this is all better than we anticipated, and is very gratifying.

The year has not been without its casualties. Low waters, weedy pastures and hot weather were followed by typhoid fever, cholera infantum, and diarrhoea. About 30 cases of diphtheria have been reported to me. Of these, five proved fatal. During November and December la grippe was everywhere. This was followed by a



number of deaths among the old, the sickly, and the very young. It was quite noteworthy that this disease was frequently a causative factor in abortions and prematnre births, and, while no fatalities occurred among the mothers, the relative mortality among the new born was very great, even when born at full term, if mother and child were suffering from the malady.

I. R. SWIGART, M. D., *County Health Officer.*

MEADE COUNTY.

MEADE, February 6, 1892.

It is with pleasure I report that we have not been visited by any epidemic disease during 1891, save whooping-cough, and that in rather a mild form. There have been five cases of diphtheria, and one death. A few cases of measles have been reported, but no deaths.

My report of deaths for the year may fall short of the facts, and am sure the report of births will do so. Births occurring far in the country are generally without medical attendance, and are not reported.

The general sanitary condition of the county is good. No attention has been paid to vaccination in the past year. The rules as to isolation and placarding of infected premises are obeyed.

C. BUTTON, M. D.,

*County Health Officer.*

MONTGOMERY COUNTY.

ELK CITY, January 17, 1892.

I submit this, my fourth annual report, with a greater degree of satisfaction than is usual in making my annual report, for I believe that during the past year the profession has taken more interest in sanitation and preventive medicine than ever before; and even the laity are learning to look to the health office for protection during epidemics of contagious disease.

During the year, we have been comparatively free from contagious disease. A few cases of measles, and one death from same; also, a few cases of diphtheria, and one death from same was reported, but no general outbreak resulted, owing to precautions taken. We had a small-pox scare during the first quarter, (a full report of which has been submitted,) which, however, resulted in some good, for there was a very general vaccination throughout the county.

The sanitary condition of the poor-house and jail and other public buildings is good.

The water supply in this county is largely obtained from wells, except in the large towns, where hydrant water is used. These wells are from 15 to 40 feet deep, and are supplied by surface water as a rule. During the summer and fall there was a long-continued drought, and the water supply became very deficient, many of the shallow wells affording little or no water at all, necessitating the use of water from pools in water-courses that had ceased to flow. As a result, there was a great deal of sickness of a malarial character, some cases resembling typho-malarial fever in character and duration, but with less enteric trouble.

I think our ice, meat and vegetable supplies are healthy.

In tabulated form, I inclose the return of marriages, numbering 274; this is complete. There were licensed 11 more, but not returned. I feel grateful to the probate judge for his assistance in obtaining this full return. The number of births returned is 180; this is incomplete, but I have no way of knowing just how many should have been returned. The number of deaths returned is 52, which is most likely incomplete.

I am going to make a special effort the coming year, and hope, by the assistance of the undertakers, to be able to make a complete report of deaths.

With this report, I send you a list of the physicians and accoucheurs registered with the county clerk, noting removals and deaths. The number registered is 80. A few only have failed to register, and they, as a rule, are undergraduates, which may account, in part, for their neglect. Of those registered, 46 are regular, 19 eclectic, 7 homeopathic, 3 physio medical, 3 midwives, and 2 not given.

Of this great number seeking to practice the healing art through the different "pathies" in this county, fully one-half remind us of "Old Pill Garlic," who never saw the inside of a college, neither literary nor medical. This suggests that we are in great need of a law regulating the practice of medicine—a law that will protect the laity, the vast number of whom must of necessity remain ignorant of the science and art of medicine.

JNO. T. DAVIS, M. D., *County Health Officer.*

#### MORTON COUNTY.

RICHFIELD, January 1, 1892.

Typhoid fever, cholera infantum and la grippe have been the prevailing diseases, but the mortality is very small. The general sanitary condition of the public buildings, and of the county in general, is good.

Garbage, slops and household wastes are fed to swine. Our butchering establishments are well conducted. The rules as to isolation, placarding, etc., of infected premises are well obeyed. I know of no locality whose sanitary condition at this time is not well looked after.

Little or no attention paid to vaccination.

J. M. PHILIPS, M. D.,  
*County Health Officer.*

#### MARSHALL COUNTY.

WATERVILLE, February 8, 1892.

The year just closed has been marked by a decided advance in health work, especially in the appreciation of the people of this county. They have learned that the health service was established in the interests of the people, and are not slow in taking advantage of its benefits. The honorable Board of County Commissioners have taken the matter well in hand, and have given me every encouragement and assistance. Physicians and midwives evince more interest in the work, and the returns are more prompt, as shown by my reports.

Diphtheria has prevailed in the county, and each case, as far as possible, was personally investigated and quarantined. A reported epidemic, by irresponsible parties, created considerable alarm and led to closing the schools, until, by personal inspection and public notice that the disease did not prevail, and that not a single case had been found, confidence was restored.

The coming year promises to be marked by a closer attention to the health laws than has hitherto prevailed.

I trust you will continue your efforts in this direction, and I promise you every assistance in my power.

H. HUMFREVILLE, M. D., *County Health Officer.*

#### NEMAHIA COUNTY.

SENECA, February 8, 1892.

I have been delayed until this date in order to make my annual report as full as possible. I have been somewhat encouraged with the work for 1891, as compared with the previous year.

La grippe has prevailed extensively, several serious cases having been reported, but no deaths.

The notices which I received from you, and sent to every registered physician in the county, have had a beneficial effect. Quite a number of physicians who have not been in the habit of reporting came to the conclusion that the State Board

meant business this year, and they have acted accordingly. In two towns in this county, viz., Sabetha and Bern, none of the physicians have reported, and one from the latter town declares when he does it will be at the end of a lawsuit. I do not know the feeling of the present County Commissioners relative to the enforcement of the law in this particular. They seem, however, to be interested in maintaining a good sanitary condition in and around the jail and county poor-house, and to see that a sufficient amount of good, wholesome food is provided for the inmates of same.

Alice G. H. Anderson, M. D., *County Health Officer*.

#### OSBORNE COUNTY.

OSBORNE, January 30, 1892.

The health of the county has been very good throughout the year, with the exception of the first three months, during which time la grippe caused a considerable amount of sickness, and increased, somewhat, the usual mortality. During the hot months we were especially free from the usual troubles among children, the reason for which, I think, was the absence of any protracted severe heat.

As to suggestions for improving the health service, I think it would be difficult to do much more than we have been doing under the present law. If we could get the County Commissioners to take hold of the matter with a little more interest, I think we might be able to accomplish more. Their action would have a tendency to remove some of the popular prejudice that seems to exist in regard to the health service. Would suggest that the State Board communicate with the County Commissioners directly, and try to get them to take hold of the matter with a little more interest. I think the most important thing needed in our State health service is legislation giving County Health Officers more power, and the State Board more funds to operate with. Also, some legislation by which we can shut off the quacks, etc., from practicing medicine in this State. As it is at present, Kansas is a dumping ground for other States to unload upon us their imposters in the practice of medicine. In this part of the State, I think fully one-half of the people practicing medicine are non-graduates and irregulars. Is there any remedy under the present laws?

B. F. Chilcott, M. D., *County Health Officer*.

#### OSAGE COUNTY.

BURLINGAME, January 1, 1892.

Scarlet fever has prevailed in the southeastern portion of the county only. It is of a mild type, no deaths being reported.

The sanitary condition of our public buildings is not good, because of their old, dilapidated condition, and insufficiency of breathing space, as already reported for the jail and poor-house. The asylum for the insane of the county is new and well constructed; has a capacity for 8 or 10 inmates. A commodious wash-house and bath-room for the poor-farm has just been completed—a much-needed improvement, and of great convenience to the poor destitutes, as well as to the superintendent.

In Burlingame and other towns in the county I have visited, they are as indifferently disposed as to sanitary matters as they were before the establishment of the State Board of Health. Last summer, I called upon the citizens of the county, through an article published in our principal paper, to take steps necessary to prevent the origin and spread of miasmatic and septic diseases; but it received little attention. There is still a great carelessness as to the disposition of slops, garbage, and household wastes.

I would advise that the State Board of Health send, or cause to be sent, to every physician and County Commissioner in the State, a copy each of the Health Laws.

the Rules of State Board of Health, and the Duties and Powers of Local Boards, that they may not, as many of them do, claim ignorance on these important subjects. There exists a careless indifference, or an ignorance, of the laws governing sanitation, which can only be met by educating the people upon this subject. The State Legislature should make the necessary appropriation for this purpose, knowing full well that the wealth and happiness of the commonwealth depend upon the health of its people.

JAMES HALLER, M. D., *County Health Officer.*

#### OTTAWA COUNTY.

MINNEAPOLIS, January 18, 1892.

My statistics for last year are not full enough to give a perfect report as per blanks. For the last quarter the results are most satisfactory. The outbreak of measles, I wrote you of, seems to have been quelled. There are still a good many cases, but the disease is not spreading.

Diphtheria made its appearance, but its spread was promptly stopped.

The County Board of Health, at its last meeting, instructed me to require privy vaults whose contents are above ground to be cleaned. Accordingly, I have directed the mayors of the incorporated cities of the county to have this matter attended to, by declaring such places nuisances. Some of them are afraid to try it, and I want your opinion on the matter. It will be found all over the State; this is a potent cause of typhoid fever, etc.

I congratulate the State Board on the vigorous manner in which its work is being pursued. The vital statistics will certainly be affected by it, with the balance in favor of longevity.

Hoping for the continuance of these efforts, I remain,

J. F. BREWER, M. D., *County Health Officer.*

#### PAWNEE COUNTY.

LARNED, February 2, 1892.

The prevailing diseases have been influenza and pneumonia; some diphtheria, whooping-cough, measles, and scarlet fever. The reports of these diseases by the physicians have been few. We had diphtheria in Larned, but by strict preventive methods its extension was promptly checked. Scarlet fever has been reported from the northwest portion of the county, but no deaths thus far. We have had quite a visitation from influenza, but, fortunately, no deaths from that cause. It is difficult to get reports.

The sanitary condition of the public buildings, and of the county generally, is good. I know of no place which is in a decidedly unsanitary condition. The supply of well water in this city is of poor quality. No system of sewerage in the county. In cities under 5,000, the privy vaults should be movable, and disinfected thoroughly at short intervals.

Our ice and milk supplies are good, although the source of the ice supply—the Pawnee creek—is not entirely free from contamination.

We have no isolation hospital or building. The rules for isolating and placarding infected premises are not well obeyed. Some attention is given to vaccination.

J. M. CUMMINS, M. D., *County Health Officer.*

#### POTTAWATOMIE COUNTY.

WESTMORELAND, January 22, 1892.

Inclosed find my report from July 1, 1891, to January 1, 1892, the time I have been Health Officer. I have endeavored to have the physicians of this county report their births and deaths, but it seems impossible to get them to take any interest in

it. However, I think this year will show quite an improvement over last. There have been 23 births and 3 deaths reported to me. No cases of typhoid fever, diphtheria, scarlatina, or small-pox reported.

The health of the county is good, and the sanitary condition of our county poor-house, jail and public buildings is excellent.

T. R. CAVE, M. D.,

*County Health Officer.*

#### PHILLIPS COUNTY.

PHILLIPSBURG, January 17, 1892.

In regard to our work during the past year, nothing of any marked character has been undertaken and performed. My predecessor, for the last two years of his occupancy of the office, became disgusted with the manner in which the physicians of the county sent in reports, and he could do nothing with them. It is nearly as bad now. I have sent written instructions to them, as furnished by the State Board, also blanks, but, as a rule, they have failed to respond.

We have several men practicing in the county who are neither legally nor otherwise qualified to practice medicine, within the meaning of the term.

We have had no epidemic of contagious diseases. I have heard once or twice of contagious diseases, but have failed to be notified of the same. If some plan could be devised to compel reports from all, it would greatly further the work. Contagious and infectious diseases should be reported at once. Whenever we learn of such cases, we at once isolate the inmates of the house and duly placard the premises. I have at present no further suggestions to offer as to improving the health service.

H. WALLACE, M. D., *County Health Officer.*

#### PRATT COUNTY.

PRATT, January 18, 1892.

During the year ending December 31, 1891, there have been reported to me 74 marriages, 130 births, and 72 deaths. I have received reports from every doctor in the county, all the undertakers, and the probate judge, but not any from the ministers.

No epidemics worthy of note have visited our county during the year. A case was reported to me by the attending physician, during the month of January, as being a very virulent type of small-pox, in the person of a young man living near Inka, who had just returned home from Colorado.

I at once ordered a quarantine and reported the case to the State Board of Health. Another physician was sent out to see the case, who also reported it to be small-pox.

On the strength of these reports, the County Commissioners sustained my quarantine, and employed a physician and nurses to attend the young man. He recovered rapidly, and no other cases occurred, not even in the family he lived with. One item of good that came from this case was to cause many persons to be vaccinated for the first time, and many others to be revaccinated.

Let me here suggest that a very good measure for our sanitarians to espouse, would be one that would bring about a law that would compel parents and guardians to have their children properly vaccinated before they reach the age of four years.

Sanitary precautions have been fairly well observed by our people, so that, notwithstanding the rank vegetation and unusual amount of moisture, there have been less malarial and typhoid fevers than usual. Our slaughter-houses are well located, our meat and vegetable markets are kept neat and clean, and everything in them pure and wholesome, by a liberal use of ice and running water.

Our ice supply is gathered from living water, with no suspicion of pollution.

The milk supply to the city of Pratt is furnished by dairymen who keep *cows*, and we have every reason to believe the milk pure.

Our jail has had but few occupants during the year, never more than three, and they have been very well cared for. The poor-house has been rented out because of a scarcity of pauper tenants.

There have been no cases of scarlet fever or diphtheria reported to me. La grippe and measles have visited some of our families, but mostly in a very mild type, and easily controlled.

The County Commissioners have taken more interest than usual in sanitary affairs. I am of the opinion that a better interest might be awakened among our physicians on sanitary subjects if they were each furnished with the annual report of the State Board of Health, and such other papers of interest on kindred subjects as are usually sent only to the County Health Officer or local Board of Health.

This, it is true, would involve a little more expense, but it would make profitable much that is now spent fruitlessly. Our County Health Officers, and, in turn, our State health officers, could and would do very much more good, for the same money, if they had the coöperation of the remaining physicians, or even a majority of them, to say nothing of the good these co-laborers would accomplish of themselves in the prevention of disease and the promotion of public health.

O. L. PEAK, M. D., *County Health Officer.*

#### RAWLINS COUNTY.

LUDELL, January 12, 1892.

The reports of births and deaths are few, owing to the negligence of the physicians. None have refused to report, but simply neglect to do so. The undertakers have been very prompt. The return of marriages is complete, the probate judge doing his duty very cleverly.

I am pleased to report that we have had unusual good health throughout the year. No epidemics, and only a slight visitation of scarlet fever.

I would suggest a little wholesome legislation in regard to the carelessness or willful neglect of physicians in reporting. The penalty for such failure or neglect should be a fine and imprisonment. A mere fine, in these parts, has no terrors for many of the people with whom the Health Officer must deal.

J. L. CONSTABLE, M. D., *County Health Officer.*

#### RUSH COUNTY.

LA CROSSE, February 12, 1892.

We have had a few cases of scarlatina, whooping-cough and typhoid fever during the last half of the year, but very few deaths.

Without any reports from physicians, I am unable to make out an annual report. The County Board has notified the physicians of the county to report, and we will make one more effort to enforce the law, failing in which, I will resign.

I labored more than 10 years to have health laws enacted in the State of Illinois, and was well pleased when the law was passed in Kansas, but have been disappointed to find so little interest taken in the subject by our people.

W. M. GOODWIN, M. D., *County Health Officer.*

#### RENO COUNTY.

HUTCHINSON, January 20, 1892.

I can say that the physicians of this county have done fairly well in their reports during the last part of the year, some taking great interest, others making partial

returns, and a few entirely ignoring the law, making no reports at all. Hope to have better reports for next year.

In this connection I will say that the birth reports are very meager for two reasons: First, the physicians have not given full reports; and second, fully one-half of the births in the county during the year have been without the presence of a physician or midwife. The results have been favorable, as a small number only of fatal results have been reported or known—I believe one case of peritonitis and one of septicemia. The latter was one of those cases where all precautions were taken, the patient being, in many respects, a shining mark.

The year 1891 has been one of unusual health to the people of our county. The summer months were marked by the absence of the diseases peculiar to the heated term. Those occurring were very amenable to treatment, and the mortality unusually light.

The rainfall was good, and very favorable to growth of vegetation in the summer months, followed by lack of rain during autumn. Such conditions would naturally be conducive to malaria, but this season failed to develop that disease to any marked extent.

Dysentery was scarcely known and fevers few. We have some cases of mortality reported as typhoid by undertakers, not confined to any particular locality, and, if true as reported, show the disease not epidemic. We find it to be a rule among our physicians to report all lingering fevers as typhoid. Intermittents were conspicuously absent. There can be no doubt but malaria had some influence with the low fevers, but we had no typical cases of malarial fevers, and feel safe in saying that this county is as safe from malaria as any place can be.

Our winter months have been mild; few mornings since November 1st without frost, but the crispiness of the morning was soon dispelled by the sun, and the days became pleasant.

La grippe has prevailed in the country, villages, and in this city. Rich and poor have had an equal share. But one fatal case has thus far been reported.

During the month of October and early November, it seemed as if we were to be scourged with diphtheria. The disease at its outset was malignant, doing its fatal work in 24 to 52 hours. Our people were alarmed to the extent that they were ready to and did carry out all sanitary measures advised by the family physician and Health Officer. Families affected were quarantined; houses and outbuildings cleansed and fumigated; in fact, every measure taken to prevent the spread of the disease. Fifty cases of real diphtheria were reported, and ten deaths. But few people failed to have more or less sore throat during this time, which plainly showed the tendency to diphtheria.

A careful examination of premises failed to disclose the presence of local cause, and the cases were scattered and isolated in different portions of city and neighborhood, and never over two in one family. No cases were attributed to intercourse between neighbors.

You will see that we report 17 deaths from consumption. Of these cases, I find from careful inquiry that over one-half had a residence of less than one year in the county. I find many people have located in the Arkansas valley "for their health," which in many of these cases has undergone a marked improvement.

The year 1891 is now gone, and, it is to be hoped, not without its lessons for good. To educate the popular mind, or to enlist professional men in a great undertaking, is not the work of an hour; but we do hope that the medical men of Kansas will do their duty in the future, and that our law-makers will pass some law that will secure reliable vital statistics.

A. W. MCKINNEY, M. D., *County Health Officer.*

## ROOKS COUNTY.

STOCKTON, January 8, 1892.

Influenza or la grippe has been the prevailing disease during the last quarter of the year, but we have also had some cases of scarlatina and typhoid fever. The general sanitary condition is good. I know of no place which is in an unsanitary condition at present.

The rules for isolating and placarding infected premises are obeyed. No attention is given to vaccination.

W. B. CALLENDER, M. D.,

*County Health Officer.*

## RUSSELL COUNTY.

RUSSELL, December 31, 1891.

The material not being furnished, I have no report to make, except marriages, 45, and deaths reported by undertakers, 46.

The sanitary condition of public buildings, and of the county generally, has been good.

Remittent fever prevailed to a considerable extent during the fall, but less fatal than formerly. There have been a few cases of scarlet fever.

J. W. ROBB, M. D., *County Health Officer.*

## SHAWNEE COUNTY.

TOPEKA, February 12, 1892.

My reports are necessarily defective and incomplete, owing to the lax manner in which many physicians respond to the efforts of the State Board to gather a complete record of statistics of births, deaths, and infectious diseases. To be of any value, these statistics should be full, and should include every case coming under those headings, stating not only the number of each particular class, but also the general facts and anomalies, if there be any, attending them, as well as their history and termination. It is to be hoped that physicians will come to a due appreciation of the value of such statistics, and will act accordingly.

The general sanitary condition of the county has been very good. There have been no epidemics, and but a few cases of malignant contagious diseases, a report of which was sent you several months ago. In my opinion, these figures represent about two-thirds of the actual number of births and deaths, and nearly all the infectious diseases.

F. W. BAILEY, M. D., *County Health Officer.*

## SEDGWICK COUNTY.

WICHITA, February 1, 1892.

My report is not complete as to vital statistics, as the physicians have not all reported, and several will not report. The physicians in the county have reported well, but there is an indifference in this city. The present law is deficient.

In Wichita there is a sewer system which, when flushing is added, will, I think, prove satisfactory. The water supply (hydrant) is excellent. The poor-house is healthily located and well cared for.

The sanitary condition of the county and city jail is good; the food and water supplies also good.

We have two hospitals in the city of Wichita, one under the control of the city and county; the other under the control of the Sisters of Charity. In comparison with the means furnished, both are doing good work. We also have a children's house, which is supported by the city and county and the charitably disposed, and



is doing excellent work for our poor and orphan children. There is also a colored children's home, which is supported by the city and county, and is doing well.

Our school buildings are modern as to heating and ventilation, and are in excellent condition.

About July 1, there began an epidemic of diphtheria in Wichita. There were 118 cases and 30 deaths. Soon after, scarlet fever was reported, of which disease there have been 22 cases, and no deaths. All of these cases except three or four were in the city.

There has been a lack of coöperation on the part of physicians in reporting births and deaths, as well as contagious diseases. The County Commissioners are desirous of helping all in their power to carry out sanitary measures.

P. D. ST. JOHN, M. D., *County Health Officer.*

#### SHERMAN COUNTY.

GOODLAND, February 9, 1892.

My annual report I forwarded you January 15th. The statistics therein contained are as full and complete as the circumstances would allow.

Nothing extraordinary occurred during the year except the cases of small-pox in May last, already reported to your office.

In my work as County Health Officer, I was assisted in every way by the Board of County Commissioners, and the year's work in that respect was very satisfactory.

Upon the appointment of my successor, I turned over to him all books and papers pertaining to this office.

E. E. BURWELL, M. D., *County Health Officer.*

#### SHERIDAN COUNTY.

Hoxie, January 6, 1892.

During last quarter, ending December 31, 1891, we had a number of cases of scarlet fever. The epidemic was mild; no deaths occurring from this cause. The most serious annoyance being from troublesome sequelæ, of which there were several cases of acute nephritis, and a number of cases of inflammation of the sub-maxillary glands. Every possible effort was made to confine the disease to those already afflicted. The schools were closed, proper disinfection of the excreta was made, and every sanitary regulation practicable put in operation. I have been unable to trace the source of infection, it being conveyed in an indirect manner. There have been no new cases reported lately, and I hope we are freed from further annoyance from this source. There have been a number of cases of la grippe, but all much milder than heretofore.

I. A. WINTERNITZ, M. D., *County Health Officer.*

#### STANTON COUNTY.

JOHNSON CITY, January 4, 1892.

At first, I thought I would make no report, as I have received but very little assistance from the County Board, and no compensation whatever. On second thought, I concluded to make one more trial. I have submitted a bill for services as Health Officer for the year 1890, amounting to \$15, and for 1891, \$25. The Commissioners are in session to-day, and I intend they shall take some action in the matter. I can no longer give my time to the work gratuitously.

I send you, inclosed, a very full report, I feel sure; all the deaths, all the marriages, and nearly all the births. One midwife has not yet reported to me, but says she has reported to the County Clerk, and that he has lost the reports. I cannot close without thanking the State Board for the interest manifested in helping me in my work.

C. A. CULVER, M. D., *County Health Officer.*

## STEVENS COUNTY.

HUGOTON, January 1, 1892.

My reports are not altogether complete, as we have about six pretenders, of both sexes, who will not register or report upon their births and deaths. I have, however, by constant vigilance, been able to get nearly all of them.

We had, this fall, four cases of diphtheria, one of which proved fatal. There have been a great many cases of "sore throat," very similar to the above-named disease and apparently contagious, as it would attack three to five members in one family, yet the membranous deposits were such as to make me very doubtful as to the real nature of the disease.

Last spring, we had a good many cases of la grippe, only two of which proved fatal, and a case of typhoid fever, caused by the carcasses of three dead rats in the well which furnished the water supply. Sanitary condition, generally speaking, is very good, excepting a few "dug-outs," where they probably will use more precaution hereafter, as diphtheria did its ravages in one of them.

The Commissioners have always been inclined towards working in harmony with the Health Officer, only they figure a little too close on his salary, which is only \$50 per annum.

C. L. EBNOTHER, M.D., *County Health Officer.*

## SCOTT COUNTY.

SCOTT CITY, February 15, 1892.

It is useless for me to take up much space as to Scott county's report. Our locality is a healthy one, the diseases ordinary, and easily managed. Sanitary rules are observed as much as one could expect in a sparsely-settled county, whose inhabitants are, as a rule, quite poor.

J. F. BOND, M.D.,

*County Health Officer.*

## STAFFORD COUNTY.

STAFFORD, January 8, 1892.

I have notified the physicians of the county as to what will be required of them and distributed the blanks.

Our county is in very good sanitary condition, except a few cattle pens, which I am going to have moved soon.

We are having some cases of la grippe, but no diseases of a contagious nature.

T. W. SCOTT, M.D., *County Health Officer.*

## SMITH COUNTY.

LEBANON, January 12, 1892.

I inclose the annual reports. I have lately received certificates of deaths of diphtheria, which seems to follow the Solomon river valley as a rule. Cedarville and Kensington were invaded last spring, and several deaths occurred. I have caused the article on diphtheria to be published in four of our county papers of the largest circulation, this week. The schools are being closed in the stricken localities.

The disease has prevailed at Gaylord, about 15 miles from Lebanon, for some weeks, and several deaths have occurred. It is supposed the attack here is owing to an extension of the disease from Gaylord.

I am of the opinion that the disease is not spreading very much. The first case near here, which died last night, caused great excitement. I have succeeded in closing the schools and churches here in town for two weeks, and will try to do the same in the country immediately, with those not already closed.

I shall do my best to have the County Commissioners pay more attention to this matter.

Am getting along better with the physicians about the importance of reporting births and deaths. Only two or three remain who are neglecting to report, and I think they will pay stricter attention hereafter. W. C. BOWER, M. D.,

*County Health Officer.*

#### THOMAS COUNTY.

COLBY, January 1, 1892.

Typho-malaria, pneumonia and cholera infantum have been the prevailing diseases.

The sanitary condition of our public buildings, and of the county generally, is good.

Our water supply is good, and free from surface-water, our subsoil being impervious. Wells are very deep.

The rules for isolating, placarding, etc., of infected premises are obeyed. We have no building set apart for the treatment of contagious diseases.

W. M. EDWARDS, M. D., *County Health Officer.*

#### WALLACE COUNTY.

SHARON SPRINGS, January 11, 1892.

I was appointed County Health Officer November 7, 1891, and, as there has been no previous record kept, my report must be very imperfect. There have been no returns made to me except by undertakers. I have but one birth and five deaths to report since November 7. There have been 13 marriages during the year.

I have seven cases of diphtheria to report; two fatal. There were other cases of sore throat, some of which were undoubtedly diphtheria, but I did not see them, and they were not reported to me. The disease was brought here from Colorado about the 1st of November. Schools were closed in Sharon Springs for about a month, and the disease did not extend beyond this school district. Physicians have failed to report.

J. T. NEWTON, M. D., *County Health Officer.*

#### WABAUNSEE COUNTY.

ALMA, January 8, 1892.

Under cover herewith, please find annual reports for 1891. They are as complete as can be made from material at hand. I have only very recently been elected to the office of County Health Officer.

The sanitary condition of the county is good. The poor-house, jail, churches, school-houses and other buildings have been examined, and I find them above the average in sanitary condition.

E. SCHEIDT, M. D., *County Health Officer.*

#### WICHITA COUNTY.

LEOTI, January 31, 1892.

I herewith hand you my report for 1891. You will note that I have but little to report, from the fact that deaths in this county are very rare; and when I state that our population is nearly 2,000, you will agree with me, that western Kansas, and especially Wichita county, is "distressingly healthy." Not a single case of a contagious nature, during the past year.

Of course, we have had la grippe—perhaps a hundred or more cases, but happily no deaths to record from that source.

The sanitary condition of all county and municipal buildings, and of the county in general, the most exacting that could be desired.

Our county officers and physicians are in harmony with the actions of the State Board of Health.

A. R. KNAPP, M. D., *County Health Officer.*

## WASHINGTON COUNTY.

WASHINGTON, January 15, 1892.

In presenting a brief summary of the operations of the Board of Health of this county, I will first refer to the cases of diphtheria occurring in this county in September and the first part of October, 1891.

There were eight cases in all, and three deaths. There appear from the report to have been 10 in the family, and all but two had the disease. The ages were from five years to the mother, whose age was not given. This was before the organization of our board, and only one case has been reported since the organization, and that was doubtful, the patient's recovery being very prompt.

From the 12th of November, 1891, to the 31st day of December, 1891, inclusive, 23 cases of scarlatina have been reported to this office, with one death. The first cases reported were in the city of Greenleaf. A large per cent. of the cases occurred there, because the disease being mild, and called "scarlet rash," the children were allowed to attend school. When the attention of the board was called to the matter, strict regulations were enforced, and the further spread of the disease speedily prevented.

The physicians are, generally, reporting fairly well. All have been supplied with blanks and instructions. All obstetricians, so far as this board has knowledge, and all undertakers in the county, have been supplied with blanks, and are reporting very well. The probate judge is coöperating with this office in a very satisfactory and efficient manner.

I have called on the county attorney for an opinion as to what portion of our laws he will be able to enforce, in case the necessity arises, but as yet he has not responded.

A few cases of typhoid fever have occurred in the eastern part of the county. Most of the cases occurred before the County Board was organized, and those occurring since have not been formally reported, and cannot, for that reason, be properly included in this report.

In one family the source of infection was a case imported from Green, Clay county. One very mild case occurred in the neighborhood, outside of this family, as the direct result of contagion. In the other cases, the source of infection appears to have been local, and due to filth on the premises, in such a position as to be washed toward the well with every rain; privy, hog pen and decomposing sorghum pulp furnishing the offending matter. No other source was apparent in this instance. How many deaths have occurred has not been reported to this office; all had occurred before our organization.

A Board of Health has been appointed by the city of Washington, but it has not yet been formally organized. The ordinance creating the board was passed by the city council in form and substance as furnished from the office of the State Board of Health.

The other organized cities of the county have been furnished a copy of said ordinance, accompanied by a request to pass it and organize a Board of Health, but as yet none have, to our knowledge, taken action thereon.

J. H. GREEN, M. D., *County Health Officer.*

## WOODSON COUNTY.

YATES CENTER, January 15, 1892.

We have done the best we could to induce the physicians of the county to make the proper returns, but so far have not succeeded very well. We have not yet re-

sorted to prosecutions; in fact, think some of them would like to have us make a test case.

Influenza, with the usual complications of bronchitis, pneumonia, etc., has been quite prevalent during part of November and December. Scarlet fever in a mild form has also visited the county, although few cases have been reported to us, probably owing to the fact of its having been in such a mild form. The proper quarantine measures were enforced in all cases reported to us.

We will make the effort to render a more complete return of all reports during the rest of our term of office.

We think the sanitary condition of the county very good. Our milk and ice supplies are good. The streams are not being polluted, to our knowledge. The rules as to isolation and placarding of infected premises are partially obeyed. We have no isolation hospital or building, and no attention is given to vaccination.

WEST & HARADON, M. DS., *County Health Officers.*

#### WYANDOTTE COUNTY.

KANSAS CITY, January 15, 1892.

Pursuant to your request, I herewith send a statement in regard to the public health in Wyandotte county.

It must be necessarily meager in detail, because of the fact that, until the beginning of the new year, there was no regularly-organized Board of Health. No public record was kept of births or deaths, and reports of the existence of infectious diseases, even to the police department of the city, were of rare occurrence.

Taking into consideration the large population of Kansas City, Kas., its proximity to our larger sister city, just across the line, from which many cases of disease are received, the existence of a charity hospital here, receiving patients from all over the State, and in which the death rate is large, I am of the opinion that our death rate will compare most favorably with that of any county in the State.

No epidemics have occurred, and while isolated cases of diphtheria, scarlatina and kindred diseases have existed, to a greater or less extent, they have generally been confined to the locality in which they originated, and have given little trouble.

During the past summer 16 cases of small-pox occurred in the county, and with two exceptions resulted from a common source of infection. It was at this time plainly demonstrated that proper authority should be given to some organized body, in order that due notice might be given of the existence of the disease, proper restrictions placed upon those affected or in danger of infection, and the necessary measures for its eradication made possible of adoption.

When these cases were brought to my notice, they were promptly quarantined, and measures taken to make it effective. As many as possible were removed to a hospital hastily constructed in the suburbs. Large wall tents, with board floors, were used for the hospital, and from this and past experience, I am convinced that small-pox is best so treated.

There were no deaths, and a spread of the disease was happily averted.

Our system of sewerage is excellent, and, under the able management of our city government, is being rapidly extended and perfected.

The sanitary condition of our jails is good. The county poor-house — the largest in the State — is under good and efficient management, and the sanitary regulations are of the best.

The number of persons now being cared for in this institution is 30, and is a fair average of the number there the year round.

No deaths from acute diseases have occurred in this institution during 1891.

H. M. DOWNS, M. D., *County Health Officer.*

## VITAL STATISTICS.

An official registration of marriages, births, and deaths, in such a form as to be available for the various beneficent purposes to which such a record may be usefully applied, is considered so important a work as to meet with general and ready approval by most civilized states and nations.

In Kansas, the law makes it the duty of physicians and assessors of personal property, in the several townships and wards of cities throughout the State, to collect and report such statistics to the local Board of Health where the same occur, which boards, in turn, are required to report to the State Board of Health. The latter Board is required to report annually to the chief executive of the State, upon the facts and information thus procured, and also upon the registration of physicians, sanitary conditions and prospects of the State, and the forms of the prevalent diseases. Upon the Secretary of the State Board devolves the duty of superintending the registration of these statistics. In fulfillment of this duty, the following tabular reports are presented for 1891. It is a matter of regret that they are necessarily incomplete and unsatisfactory, but it has thus far been, and will ever be, in our judgment, found impracticable except the law shall be amended in some important respects, to present more than a wide approximation toward correctness on these very important subjects.

The powers of the Board to compel the enforcement of the law's provisions in respect of collecting vital statistics, although clothed in ample phraseology, are, nevertheless, really quite limited. It is only in the single matter of deaths that the law is full and sufficient, and even this provision, through correlation with other non-enforceable provisions, has fallen into such desuetude as to necessitate a resort to punitive methods for its enforcement.

The Board has repeatedly endeavored to bring about an amendment of the law, in vain. Failing in this, and the intent and purpose of the law being clear and unmistakable, the Board has appealed to all concerned, from the point of professional ethics, to give cordial assent thereto without hesitation or quibbling, but with only partial success.

There must exist a sound, effective legal remedy, to which recourse may be had as a last resort. Even with this power the way is difficult; without it, there can be no substantial progress.

The almost indispensable utility of correct vital statistics in promoting the interests of the public health is everywhere recognized. Without their aid it is practically impossible to make a correct report as to the health of the State, and until they shall be satisfactorily collected there can be no scientific study of public health, and very little material advancement in

its treatment. It is only through the study of these statistics that it is possible to report whether the public health or particular forms of disease have increased or decreased, as compared with former years, and to show the relation of such increase or diminution to age, sex, occupation, locality, temperature, etc.

The claim that Kansas is a healthy State goes for little or naught, in the absence of such statistics as will enable a comparison to be made with other States.

Therefore it is necessary that the law governing the State and local Boards of Health should be speedily amended, if we would save to the public what has already been gained through sanitary legislation.

TABLE NO. I.—RETURN OF THE REGISTRATION OF BIRTHS FOR THE YEAR 1891.

Index number.....	# COUNTIES.	SEX.		COLOR.		NUMBER OF CHILD OF MOTHER.											Index number.....			
		Male.	Female.	Not given.....	White.	Col- ored.	Not given.....	First.....	Second.....	Third.....	Fourth.....	Fifth.....	Sixth.....	Seventh.....	Eighth.....	Ninth.....		Tenth.....	Eleven (and more).....	Not given.....
1	Anderson <sup>1</sup>	7	6		9	4		2				5	6							
2	Archison <sup>2</sup>																			
3	Bamilton <sup>1</sup>																			
4	Brown.....	25	16		30	2		10	8	5		7	3	2		1				
5	Butler.....	47	25		82			22	18	15	7	7	3	1		1				
6	Chase.....	13	19		30			7		10	4	5	3	1	2					
7	Chesenne <sup>2</sup>																			
8	Clay.....	26	29	1	52	4		18	12	9	5	1	3	3	2	2		1		
9	Cloud <sup>1</sup>																			
10	Coffey.....	12	9		21			7	6			2		2						
11	Comanche.....	21	36		54	3		15	16	5	1	4	3	1	3	1				
12	Cowley.....	24	15		49			10	15	10	3	1	3	1	1	1				
13	Crawford.....	121	85	2	199	9		48	38	32	19	17	17	15	6	2	3			
14	Decatur.....	82	7		38			14	5	5	4	2	4	2	1					
15	Ellis <sup>1</sup>																			
16	Ellsworth.....	60	62	2	116	8		37	18	25	7	8	4	2	1	5	2	5	10	17
17	Finney.....	22	21	2	33			13	10	5	7	1	4	1					3	18
18	Ford.....	30	25		55			24	10	7	3	9	1	1						
19	Franklin <sup>2</sup>																			
20	Gardall.....																			
21	Geary.....	1	4		1			29	21	10	6	5	1	5	1	2		4	20	21
22	Graham.....	44	45		89			5	4		4							7	21	22
23	Greeley.....	4	9		13			9	8	6	3	2	2	1	1			23	23	24
24	Greenwood.....	17	16		33			7	4	5	3	3				1		10	24	25
25	Harvey.....	13	20		33			8	2	1	1	1	1				2	25	26	27
26	Haskell <sup>1</sup>	9	8		15			15										26	27	28
27	Haskell <sup>2</sup>	8			16			4	4	3	5							27	28	29
28	Hodgesman <sup>1</sup>																		29	30
29	Jewell.....	34	29		54			11	9	11	9	4	4	3			3	28	30	31
30	Johnson.....	82	79	3	157	7		30	41	22	17	11	6	6	4	1	3	29	31	32
31	Kearney <sup>2</sup>																		32	33
32	Kingman.....	48	33		81			22	13	13	10		11	2				10	31	32
33	Kiowa.....																		32	33
34	Labette.....	73	77	2	106	16	30	31	28	23	15	14	3	7	11	3	3	2	12	34
35	Lane.....	11	8		17	2		6	3	7	1	1	1						35	36
36	Leavenworth <sup>3</sup>																			
37	Lincoln.....	96	95	5	210	68		13	6	10	6	7	10	5	1	2	1	210	36	37
38	Lyon <sup>4</sup>	9	11		20			2	2	5	4	2							8	38
39	Marion <sup>5</sup>																			
40	Marion <sup>5</sup>	175	147	1	323			66	57	43	40	29	15	23	14	10	7	8	11	39



40	Marshall.....	131	152	.....	228	35	20	48	63	75	38	24	5	3	3	2	1	21	40
41	Netherson.....	71	62	4	137	.....	.....	29	36	19	17	7	7	8	4	1	3	1	5
42	Neville.....	6	9	.....	15	.....	1	1	5	6	1	1	1	2	3	2	1	11	42
43	Niemi.....	47	45	3	90	5	.....	25	19	14	8	8	2	2	3	2	1	11	43
44	Nitchell <sup>1</sup> .....	34	41	1	76	.....	.....	16	16	11	5	10	8	3	2	3	1	1	44
45	Nongomery.....	81	90	9	177	3	.....	41	42	25	22	16	13	3	5	3	1	9	45
46	Nunah.....	122	102	.....	223	1	.....	48	35	32	30	23	14	10	6	12	2	3	9
47	Neosho <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
48	Nes.....	7	3	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
49	Norton <sup>3</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48
50	Osage.....	56	42	.....	94	4	.....	33	12	17	8	6	3	7	1	5	1	4	50
51	Ostorne.....	36	61	1	120	.....	.....	31	16	10	13	5	2	5	4	2	1	14	51
52	Ottawa.....	9	7	109	16	4	165	3	2	5	3	1	.....	.....	.....	.....	.....	106	52
53	Pawnee.....	3	.....	1	15	.....	.....	3	5	4	3	.....	.....	.....	.....	.....	.....	.....	53
54	Phillips.....	8	12	.....	59	.....	.....	7	6	2	.....	.....	.....	.....	.....	.....	.....	.....	54
55	Pottawatomie <sup>4</sup> .....	10	13	.....	23	.....	.....	6	5	2	3	1	1	1	2	.....	.....	.....	55
56	Pratt.....	72	42	.....	113	1	.....	30	18	25	11	9	3	5	3	2	1	3	56
57	Rawlins.....	4	86	.....	8	.....	.....	63	39	23	13	12	12	5	8	3	.....	6	57
58	Reyno.....	38	.....	.....	184	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	58
59	Republic <sup>5</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59
60	Rooks.....	19	23	1	43	.....	.....	8	6	9	3	3	3	5	2	2	1	2	1
61	Rush.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
62	Russell <sup>6</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
63	Saline.....	53	25	22	72	1	27	27	17	12	9	1	6	2	1	1	.....	21	62
64	Scott.....	12	72	5	91	.....	.....	14	4	5	5	5	2	2	1	1	.....	.....	63
65	Sedgewick.....	101	72	.....	156	12	.....	35	38	33	23	13	6	5	11	2	4	2	64
66	Shawnee.....	63	125	.....	193	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	65
67	Sheridan.....	15	5	.....	90	.....	.....	17	13	6	2	6	3	.....	.....	.....	1	2	66
68	Sherman.....	49	27	.....	53	.....	.....	29	18	12	7	6	6	1	5	.....	6	3	67
69	Smith.....	63	47	.....	111	.....	.....	3	2	2	2	3	1	2	.....	1	.....	13	68
70	Stanton.....	19	9	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	69
71	Stevens.....	12	12	.....	44	.....	.....	3	7	6	2	1	.....	2	1	.....	.....	1	70
72	Townsend.....	10	22	.....	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	71
73	Wabasha.....	31	26	.....	57	3	.....	13	11	15	6	3	5	3	2	1	.....	48	72
74	Wabeno.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73
75	Washington <sup>7</sup> .....	8	9	1	14	4	.....	6	3	3	.....	.....	.....	.....	.....	.....	.....	1	74
76	Wichita.....	18	21	.....	29	.....	.....	5	7	10	5	7	5	1	1	.....	2	.....	75
77	Wilson.....	38	19	.....	56	1	.....	12	14	8	7	5	7	1	2	1	.....	.....	76
78	Woodson.....	12	21	.....	33	.....	.....	9	8	5	2	2	1	1	2	1	.....	.....	77
79	Wyandotte <sup>8</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	78
	Totals.....	2,352	2,128	383	4,535	130	200	1,043	827	670	469	346	249	165	135	80	51	53	777

<sup>1</sup>Failed to report for 1891.

<sup>2</sup>County Board of Health not organized until late in 1891.

<sup>3</sup>Report relates to Leavenworth city only. County Board of Health not organized.

<sup>4</sup>No report received.

<sup>5</sup>Four births reported as being the 12th; 4 the 13th; 2 the 14th; 1 the 15th; 1 the 17th, and 1 the 19th.

NOTE.—The counties of Barber, Chautauqua, Cherokee, Edwards, Gove, Harper, Morton, Rice, Riley and Stafford have organized Boards of Health, but not in practical operation until on or after the close of the year.

TABLE NO. 1.—RETURN OF THE REGISTRATION OF BIRTHS FOR THE YEAR 1891—(CONTINUED).

COUNTIES.	GROUPED AGES OF FATHERS.					NATIONALITY OF FATHERS.			GROUPED AGES OF MOTHERS.					NATIONALITY OF MOTHERS.			Index number.....	
	Under 20....	21 to 25.....	26 to 30.....	31 to 35.....	36 to 40.....	41 to 45.....	46 to 50.....	51 to 55.....	Over 55.....	Not given....	American....	Foreign.....	Not given....	American....	Foreign.....	Not given....		
Atchison <sup>1</sup>		1	3	4	4					1	3	10		1	4	5	4	1
Bartholom <sup>1</sup>		6	15	13	1	1				17	31	9	1	7	38	3		2
Brown <sup>1</sup>		17	18	12	6	3	2			22	68	11	3	11	77	5	6	3
Buller.....		5	4	11	6	1				2	22	9	1	5	15	3	14	4
Chase.....																		5
Cheyenne <sup>2</sup>																		6
Clay.....	9	15	11	5	6	2	1	5			42	14		7	44	10	2	7
Cloud <sup>1</sup>																		8
Colley.....											15	6		6				9
Comanche	1	6	18	9	6	1	2			3	50	6	1	5	16	7	3	10
Cowley.....	2	4	2	14	5	2				13	36	11	2	5	13	6	30	11
Crawford	2	24	4	53	28	12	4	2		30	166	32	10	24	173	28	7	12
Decatur.....		2	6	11	5	1	2			35	1	3	1	3	37	1	1	13
Ellis.....																		14
Ellsworth		12	29	17	21	13	4	3	1	24	87	32	5	15	65	34	25	15
Finney.....			4	1	1					35	28	6	11	3	31	4	10	16
Ford.....	19	15	9	4	4					10	14	12	11	2	6	43	8	17
Franklin <sup>2</sup>																		18
Garfield <sup>1</sup>																		19
Gary.....	1	10	23	18	6	7	1	2		4	64	21	4	8	65	16	4	20
Geary.....											13	3	3	1	2	8	21	21
Graham.....											29	4		3	23	5	22	22
Greene.....	1	8	10	8	6						5	3	4	4	18			23
Greenwood	1	6	5	1	1					12	6	5	7	1	13		15	24
Harvey.....	21	6	5	3	1					4	8	4	3	2	9	4	2	25
Haskell.....	3	2	5	3	1					3	16			2	26	16		26
Hodgeman <sup>1</sup>	1	2	6	2	1													27
Jewell.....			6	10	17	11	3	2	1	4	49	11	3	4	41	12	1	28
Johnson	18	49	42	24	14	6	2	3	6	154	10			11	157	7	3	29
Kearny <sup>2</sup>																		30
Kingman <sup>1</sup>		6	21	24	27		1	1	1	1	79	2		17	80	1	1	31
Kiowa.....																		32
Lafayette	3	24	22	25	23	14	2	2	37	119	6	27		18	125	3	24	33
Lane.....	4	2	4	4	2	2	1			15	4			1	17	2	34	34
Leavenworth <sup>3</sup>																		35
Lincoln.....									210								210	36
Linn.....																		37
Logan.....	1	7	9	16	8	17	3	4	2	2	45	20	3	6	43	23	2	38
Lyon.....		5	4	1	2	2			5	14	2	4		2	14	4	4	39
Marion <sup>1</sup>	1	33	82	71	61	23	9	10	3	25	135	183	5	35	143	174	6	40

40 Marshall.....	2	49	92	73	40	11	3	1	.....	12	99	118	66	.....	57	80	83	34	14	3	1	11	128	90	65	40
41 McPherson.....	13	40	31	20	17	7	3	.....	.....	6	87	43	7	.....	11	29	31	20	30	3	.....	13	86	51	.....	
42 Meade.....	.....	1	2	6	4	.....	.....	.....	.....	.....	14	.....	.....	.....	4	4	4	3	.....	.....	.....	14	1	.....	42	
43 Miami.....	1	5	23	16	7	3	2	1	.....	31	87	8	.....	.....	21	8	11	5	2	1	.....	36	90	5	.....	
44 Mitchell <sup>2</sup> .....	1	11	24	11	16	6	4	1	2	6	64	11	1	.....	13	18	13	13	7	5	1	6	65	9	.....	
45 Montgomery.....	23	56	32	23	14	6	5	2	.....	17	107	7	6	.....	31	50	33	29	16	7	1	13	167	6	.....	
46 Neosho.....	1	34	52	44	43	21	12	3	.....	14	177	47	.....	.....	18	65	56	37	21	13	2	12	189	25	.....	
47 Neosho <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	
48 Ness.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	48	
49 Norton <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49	
50 Osage.....	18	26	17	12	13	6	1	.....	.....	5	74	21	3	.....	17	26	24	11	10	7	.....	3	78	19	.....	
51 Osborne.....	2	11	22	19	12	5	7	2	.....	40	102	14	4	.....	15	21	13	13	13	1	1	40	104	12	.....	
52 Ottawa.....	.....	3	5	1	4	2	1	.....	.....	109	12	8	105	.....	1	5	3	5	1	1	.....	111	12	4	.....	
53 Pawnee.....	5	4	6	1	.....	.....	.....	.....	.....	.....	12	4	.....	.....	1	5	6	3	1	.....	.....	11	5	.....		
54 Phillips.....	4	4	6	3	4	2	.....	.....	.....	1	18	2	.....	.....	4	4	5	5	1	.....	.....	1	18	2	.....	
55 Pottawatomie <sup>2</sup> .....	4	9	1	2	4	1	.....	.....	.....	2	16	5	2	.....	5	5	3	1	6	.....	.....	3	14	6	.....	
56 Pratt.....	10	25	24	22	9	9	.....	.....	.....	15	105	9	.....	.....	15	28	24	17	12	.....	.....	18	108	6	.....	
57 Rawlins.....	1	2	3	1	1	.....	.....	.....	.....	.....	5	3	.....	.....	2	3	2	.....	.....	.....	.....	8	.....	.....	57	
58 Reno.....	2	36	42	35	20	6	4	1	.....	38	164	14	6	.....	31	54	31	18	10	5	.....	34	159	20	.....	
59 Republic.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	
60 Rooks.....	6	9	11	6	6	2	.....	.....	.....	1	2	40	3	.....	1	5	5	9	6	.....	.....	6	40	3	.....	
61 Rush <sup>1</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61	
62 Russell.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62	
63 Saline.....	11	24	9	7	7	1	.....	.....	.....	41	38	23	39	.....	14	22	13	9	6	1	.....	35	48	21	.....	
64 Scott.....	1	6	5	8	1	.....	.....	.....	.....	20	1	.....	.....	.....	5	8	6	2	.....	.....	.....	20	1	.....	64	
65 Sedgewick.....	1	21	29	32	35	17	7	3	30	.....	137	33	8	1	22	36	43	21	26	2	1	26	148	20	.....	
66 Shawnee.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	
67 Sheridan.....	3	7	5	5	.....	.....	.....	.....	.....	193	.....	.....	.....	.....	7	5	4	3	.....	.....	.....	193	67	.....	67	
68 Sherman.....	4	17	9	6	4	1	2	.....	.....	10	50	5	.....	.....	.....	13	15	6	4	.....	.....	10	49	3	.....	
69 Smith.....	12	25	20	14	12	8	2	2	.....	16	90	5	6	.....	20	20	19	14	14	7	.....	17	93	8	.....	
70 Stanton.....	2	10	2	3	3	1	.....	.....	.....	.....	17	2	.....	.....	1	7	1	2	3	.....	.....	7	17	1	.....	
71 Stevens.....	2	8	8	.....	.....	.....	.....	.....	.....	6	17	5	2	.....	2	10	7	3	2	.....	.....	20	2	.....	71	
72 Thomas.....	1	10	8	9	6	.....	.....	.....	.....	14	37	10	1	.....	3	11	9	3	9	3	.....	10	36	9	.....	
73 Wabunsee.....	5	14	16	15	6	1	1	.....	.....	2	43	17	.....	.....	6	17	17	15	3	.....	.....	2	50	10	.....	
74 Wallace.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	74	.....	
75 Washington <sup>2</sup> .....	3	6	4	2	1	.....	.....	.....	.....	1	1	6	.....	.....	.....	1	7	5	3	1	.....	1	1	.....	75	
76 Wichita.....	7	7	4	9	4	5	.....	.....	.....	3	29	8	2	.....	4	7	10	8	5	2	.....	3	30	6	.....	
77 Wilson.....	5	9	15	5	3	.....	.....	.....	.....	2	18	54	2	1	.....	7	8	11	9	4	.....	19	56	1	.....	
78 Woodson.....	10	7	5	6	2	2	.....	.....	.....	1	32	1	.....	.....	8	6	8	3	1	.....	.....	3	30	2	.....	
79 Wyandotte <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	
Totals.....	29	563	1,020	862	645	368	159	64	62	1,064	3,269	825	771	12	564	1,467	936	619	492	131	26	1,085	3,263	760	842	

<sup>1</sup> Failed to report for 1891.<sup>2</sup> County Board of Health not organized until late in 1891.<sup>3</sup> Report relates to Leavenworth city only. County Board of Health not organized.<sup>4</sup> No report received.



41	McPherson.....	1				2	6	4	10	5	4	12	13	8	20	20	22	11	137						106	170	133	41	
42	Meade.....					7	9	11	8	5	2	9	9	2	7	7	6	11	15						29	118	13	42	
43	Miami.....					1	1	8	5	2	6	9	9	1	6	11	11	14	55					134	111	13	43		
44	Mitchell.....	1				2	11	14	6	10	12	12	13	10	13	12	13	11	59					203	81	177	44		
45	Montgomery.....	3	2			17	8	6	12	11	12	11	16	12	21	37	14	180						238	168	177	45		
46	Nemaha.....	1	2			3	17	17	18	15	15	16	16	28	26	17	13	221						234	130	169	46		
47	Neosho.....																	29	11						11	29	47		
48	Ness.....					2												1	10							58	33	48	
49	Norton.....																										58	33	48
50	Osage.....	1	1			9	14	6	7	10	4	3	9	10	13	12	6	3	98					441	373	178	50		
51	Osborne.....	2	2			11	14	6	10	6	12	12	17	6	7	12	4	3	120					211	176	136	51		
52	Ottawa.....					2	3	4	4	2		4						105	125									52	
53	Pawnee.....					1	1	1	1	2					1	2	7	4	16									53	
54	Phillips.....					7									2				20								103	49	54
55	Pottawatomie.....	1				3	2	1	1	1	2	2	2	5	3	3	4	2	145								192	128	55
56	Pratt.....	4	1			4	4	8	21	5	13	9	11	13	11	8	7	114									120	93	56
57	Rawlins.....																		8								31	57	57
58	Reno.....	3	1			14	6	5	6	7	9	8	15	9	16	47	26	16	184								3	58	58
59	Republic.....																											3	59
60	Rooks.....																											48	60
61	Rush.....	1				6	4	4	2	7	3	4	2	5				3	43								26	61	61
62	Russell.....																											63	62
63	Saline.....																											40	63
64	Scott.....					19	10	4	4	2	10	6	6	9	8	12	10	100									169	30	64
65	Sedgewick.....																		21									181	65
66	Shawnee.....	4	6			1	13	8	11	10	5	4	5	17	21	41	31	4	178								442	372	66
67	Sheridan.....					11													193								18	29	67
68	Sherman.....																		20								56	67	68
69	Smith.....	1	1			5	7	6	1	12	6	2	5	4	3	2	3	3	52								16	56	69
70	Stanton.....					1	5	4	8	10	14	10	11	8	7	8	13	9	111								8	18	70
71	Stevens.....	*																										11	71
72	Thomas.....	1				1	1	1	4	2	3	4	1	3	4	2	1	24									36	150	72
73	Wabunsee.....					3	3	1	5	2	3	3	3	7	4	6	2	2	48								91	188	73
74	Wallace.....	2				4	5	2	4	6	11	2	10	5	7	1	1	3	60								29	196	74
75	Washington.....																		18								48	75	75
76	Washington.....	1				7	5	2	2	1	4	2	1	3	2	4	5	18	39								25	107	76
77	Wichita.....					3	2	12	4	6	5	4	5	4	1	5	5	1	57								280	226	77
78	Wilson.....					3			3	3	2	5	2	1	6	5	3	3	93								157	193	78
79	Wyandotte.....																		33								169	69	79
	Totals.....	32	57	97	357	262	267	265	256	300	299	360	403	419	569	482	626	4,865	6,555	6,536	17,593	6,115	3,438						

\* Failed to report for 1891.

\* County Board of Health not organized until late in 1891.

\* Report relates to Leavenworth city only. County Board of Health not organized.

\* No report received.

\* One case of triplets reported.









[illegible]

<sup>1</sup> Failed to report for 1891.

<sup>2</sup> County Board of Health not organized until late in 1891.

**a Reports relates to Leavenworth city only. County Board of Health not organized.**

No report received.

<sup>3</sup> Health Officer reports one death in a male over 91 years.

<sup>6</sup> Health officer reports three deaths in males over 90 years.





TABLE No. II.—RETURN OF THE REGISTRATION OF DEATHS FOR THE YEAR 1891—CONTINUED.

COUNTIES.	
Index number.....	Anderson <sup>1</sup> Atchison <sup>2</sup> Bourbon <sup>3</sup> Brown Butler Chase Cheyenne <sup>2</sup> Clay Cloud <sup>1</sup> Coffey Comanche Cowley Crawford Decatur Ellis <sup>1</sup> Ellsworth Finney Ford Franklin <sup>2</sup> Garfield Geary Graham Greeley Greenwood Harvey Haskell <sup>2</sup> Hodgeman <sup>1</sup> Jewell Johnson Kearny <sup>2</sup> Kingman Kiowa <sup>2</sup> Labette Lane Leavenworth <sup>3</sup> Lincoln Logan
Diseases of uterus and vagina.....	.....
Ovarian diseases.....	.....
Other diseases, urinary system.....	.....
Diseases of bladder and prostate.....	.....
Hematuria.....	.....
Calculus.....	.....
Suppression of urine.....	.....
Uremia.....	.....
Bright's disease,.....	.....
Nephritis.....	.....
Bronchocele.....	.....
Diseases of spleen.....	.....
Other diseases, digestive system.....	.....
Other diseases of liver.....	.....
Cirrhosis.....	.....
Jaundice.....	.....
Gallstones.....	.....
Ascites.....	.....
Peritonitis.....	.....
Fistula.....	.....
Hernia.....	.....
Intussusception.....	.....
Stricture and strangulation of intestines.....	.....
Hæus.....	.....
Ulceration of intestines.....	.....
Enteritis.....	.....
Disease of stomach.....	.....
Malaria.....	.....
Hæmæmæsis,.....	.....
Dyspepsia.....	.....

Index number .....

[illegible]

Failed to report for 1891.

County Board of Health not organized until late in 1891.

<sup>a</sup> Report relates to Leavenworth city only. County Board of Health not organized.

<sup>a</sup> No report received.

<sup>3</sup> Health Officer reports one death in a male over 91 years.<sup>60</sup> Health officer reports three deaths in males over 90 years.



[illegible]

<sup>1</sup> Failed to report for 1891.

\* County Board of Health not organized until late in 1891.

<sup>a</sup> Report relates to Leavenworth city only. County Board of Health not organized.

<sup>a</sup>No report received.

<sup>6</sup>Health Officer reports one death in a male over 91 years.

Health officer reports three deaths in males over 90 years.





[illegible]

Failed to report for 1891.

County Board of Health not organized until late in 1891.

Report relates to Leavenworth city only. County Board of Health not organized.

No report received.

Health Officer reports one death in a male over 91 years.

mean cancer report three deaths in males over 40 years.

TABLE NO. II.—RETURN OF THE REGISTRATION OF DEATHS FOR THE YEAR 1891—UNCLASSIFIED.

Index number.....	COUNTIES.	MONTHS.												NUMBER OF DEATHS.					Index number.....	
		January.....	February....	March.....	April.....	May.....	June.....	July.....	August.....	September...	October .....	November...	December...	Not given....	1891.	1887.	1888.	1889.		1890.
1	Anderson <sup>1</sup> .....	1	1	1	1	1	1	1	1	2	7	27	13	49	.....	101	470	40	282	37
2	Atchison <sup>2</sup> .....	1	1	1	1	1	1	1	1	2	6	11	1	22	.....	31	.....	.....	145	.....
3	Bourbon <sup>3</sup> .....	1	1	1	1	1	1	1	1	2	3	4	1	14	.....	32	94	31	15	6
4	Brown <sup>4</sup> .....	1	1	1	1	1	1	1	1	3	4	4	1	10	.....	29	31	20	9	7
5	Butler <sup>5</sup> .....	1	1	1	1	1	1	1	1	3	4	4	1	10	.....	29	31	9	15	6
6	Chase <sup>6</sup> .....	1	1	1	1	1	1	1	1	3	4	4	1	10	.....	29	31	9	15	6
7	Cheyenne <sup>7</sup> .....	1	1	1	1	1	1	1	1	11	13	39	.....	172	.....	27	78	13	13	7
8	Clay <sup>8</sup> .....	13	1	5	18	2	43	1	10	16	11	13	39	.....	172	27	207	147	123	8
9	Cloud <sup>9</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	4	.....	76	30	16	10	10
10	Coffey <sup>10</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	4	.....	76	30	16	10	10
11	Comanche <sup>11</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	4	.....	76	30	16	10	10
12	Cowley <sup>12</sup> .....	32	31	48	37	27	24	39	49	34	29	30	15	285	.....	202	321	357	13	13
13	Crawford <sup>13</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	23	.....	24	.....	.....	.....	.....
14	Decatur <sup>14</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	23	.....	24	.....	.....	.....	.....
15	Ellis <sup>15</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	23	.....	24	.....	.....	.....	.....
16	Ellsworth <sup>16</sup> .....	12	1	1	1	1	1	1	1	1	1	1	1	85	.....	66	89	74	73	16
17	Finney <sup>17</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	29	.....	32	32	22	22	17
18	Ford <sup>18</sup> .....	4	1	1	1	1	1	1	1	1	1	1	1	37	.....	68	84	59	35	18
19	Franklin <sup>19</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	37	.....	68	84	59	35	18
20	Garnfield <sup>20</sup> .....	10	6	8	11	10	9	6	8	5	11	11	1	2	.....	61	109	122	92	21
21	Geary <sup>21</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	93	.....	18	61	122	92	21
22	Greeley <sup>22</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	16	.....	8	.....	12	.....	.....
23	Greeley <sup>23</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	16	.....	8	.....	12	.....	.....
24	Greenwood <sup>24</sup> .....	5	4	2	1	2	1	2	1	6	3	1	1	46	.....	61	129	19	13	23
25	Harvey <sup>25</sup> .....	9	11	7	5	4	1	1	1	5	1	1	1	80	.....	70	50	40	95	25
26	Haskell <sup>26</sup> .....	1	1	1	1	1	1	1	1	1	1	1	1	4	.....	.....	.....	.....	.....	.....
27	Hongman <sup>27</sup> .....	5	10	5	6	2	10	13	5	8	2	5	.....	79	.....	44	69	132	89	28
28	Jewell <sup>28</sup> .....	3	6	4	1	3	4	5	10	9	9	3	1	62	.....	74	136	124	68	54
29	Johnson <sup>29</sup> .....	1	1	1	1	1	1	1	1	1	1	1	.....	18	.....	30	6	54	29	
30	Kearny <sup>30</sup> .....	1	1	1	1	1	1	1	1	1	1	1	.....	18	.....	30	6	54	29	
31	Kingman <sup>31</sup> .....	2	3	4	2	2	1	1	1	1	1	1	.....	18	.....	30	6	54	29	
32	Kiowa <sup>32</sup> .....	15	21	20	24	23	12	19	23	16	48	32	31	284	.....	179	182	32	32	33
33	LaBette <sup>33</sup> .....	2	2	2	2	5	1	2	2	4	1	1	1	22	.....	80	170	80	73	33
34	Lane <sup>34</sup> .....	2	2	2	2	5	1	2	2	4	1	1	1	22	.....	8	28	34	28	34
35	Leavenworth <sup>35</sup> .....	1	1	1	1	1	1	1	1	29	33	28	37	168	.....	37	17	5	35	36
36	Lincoln <sup>36</sup> .....	5	1	5	6	1	6	3	16	2	6	7	.....	58	.....	75	37	7	35	36
37	Logan <sup>37</sup> .....	1	1	1	1	1	1	1	1	2	4	5	.....	28	.....	.....	.....	.....	.....	.....
38	Lyons <sup>38</sup> .....	1	1	1	1	1	1	1	1	2	5	5	.....	28	.....	.....	.....	.....	.....	.....
39	Marion <sup>39</sup> .....	27	7	8	4	5	7	11	15	22	11	22	21	157	.....	44	50	71	6	19
40	Marshall <sup>40</sup> .....	11	16	16	15	10	10	15	10	9	9	9	27	160	.....	88	188	39	84	122
														157	.....	88	188	39	84	122
														160	.....	88	188	39	84	122

41	McPherson.....	11	14	19	14	16	12	10	12	10	12	10	13	14	11	.....	156	.....	101	176	34	41
42	Meade.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	.....	.....	8	42	
43	Miami.....	4	13	.....	4	5	1	2	2	5	2	1	2	3	7	.....	67	73	114	161	49	43
44	Mitchell <sup>1</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49	28	73	.....	44	
45	Montgomery <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43	.....	.....	40	45	
46	Muskogee.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53	83	73	57	46	
47	Nevada.....	5	2	7	1	1	3	7	4	1	5	1	5	1	6	.....	44	.....	94	16	47	
48	Nesho <sup>3</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	48	
49	Nesquehony.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49	49	
50	Norton <sup>4</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28	50	
51	Osage.....	16	12	22	13	10	5	4	8	3	5	3	5	5	7	.....	111	120	96	60	40	
52	Osborne.....	8	7	20	12	3	6	4	8	4	3	4	3	4	9	.....	88	.....	79	96	87	
53	Ottawa.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	52	
54	Palmer.....	3	1	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27	3	23	87	70	
55	Phillips.....	3	7	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	58	43	64	108	54	
56	Pottawatomie <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	98	71	103	45	
57	Pottawatomie <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29	.....	26	.....	56	
58	Rawlins.....	2	5	2	1	1	3	5	6	2	1	2	1	3	.....	.....	8	22	12	27	20	
59	Republic.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	149	.....	.....	.....	58	
60	Republic.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59	
61	Rice.....	3	1	5	2	1	3	4	.....	.....	.....	.....	.....	.....	.....	.....	32	50	109	.....	60	
62	Rush <sup>1</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61	
63	Russell.....	2	5	1	2	5	2	5	6	6	1	4	1	4	3	.....	42	108	.....	36	62	
64	Saline.....	4	2	5	1	1	3	4	.....	.....	.....	.....	.....	.....	.....	.....	41	33	39	.....	63	
65	Scott <sup>1</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	64	
66	Sedgewick.....	4	3	6	2	1	1	1	6	7	9	24	16	.....	.....	.....	176	181	188	49	65	
67	Sheridan.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48	66	
68	Sheridan.....	2	12	7	1	3	1	1	6	1	9	3	.....	.....	.....	.....	.....	.....	.....	.....	67	
69	Smith <sup>2</sup> .....	14	5	3	11	2	4	2	4	8	13	10	17	.....	.....	.....	52	.....	30	9	68	
70	Stanton.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28	69	
71	Stanton.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	
72	Thomas.....	2	2	4	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	71	
73	Wabancsee.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	72	
74	Wallace <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43	73	
75	Washington <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	105	74	
76	Wichita.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	
77	Wilson.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	76	
78	Woodson.....	6	5	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	77	
	Totals.....	239	232	291	251	182	211	219	324	291	324	336	379	752	.....	.....	4,031	1,904	3,006	4,208	3,086	2,432

<sup>1</sup> Failed to report for 1891.<sup>2</sup> County Board of Health not organized until late in 1891.<sup>3</sup> Report relates to Leavenworth city only. County Board of Health not organized.<sup>4</sup> No report received.<sup>5</sup> Health officer reports one death in a male over 91 years.<sup>6</sup> Health officer reports three deaths in males over 90 years.<sup>7</sup> The counties of Barber, Chautauqua, Cherokee, Edwards, Grove, Harper, Morton, Rice, Riley, Safford, and Wyandotte, which also have organized boards of health, were not in practical operation till at or after the end of the year.



[illegible]

<sup>1</sup> No report for 1891.

\*The following counties, having each returned less than 10 cases of all the diseases named within the period, are omitted from this report, viz.: Clatsopqua, Cheyenne, Cloud, Conanche, Kiowa, Meade, Morris, Neosho, Ottawa, Riley, Scott, Stevens, Wallace, Washington, and Wichita.



41 Norton.....	2	1	2	.....	1	.....	1	1	1	3	.....	3	5	.....	3	.....	26	41	
42 Osage.....	13	10	3	1	.....	1	.....	2	2	.....	2	6	4	.....	6	.....	102	42	
43 Osborne.....	.....	.....	2	4	3	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	58	43	
44 Payne.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19	44	
45 Phillips.....	8	6	7	3	2	3	.....	1	4	.....	1	1	3	5	7	4	115	45	
46 Potawatomi.....	.....	.....	.....	.....	.....	.....	.....	1	5	1	.....	9	.....	.....	2	.....	35	46	
47 Pratt <sup>1</sup> .....	.....	.....	4	.....	1	3	.....	1	.....	.....	.....	.....	.....	.....	.....	6	25	47	
48 Rawlins.....	.....	.....	1	4	1	1	.....	1	.....	.....	.....	1	.....	.....	.....	.....	17	48	
49 Reno.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43	49	
50 Republic <sup>1</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	50	
51 Roofs.....	5	4	.....	.....	.....	.....	.....	1	1	.....	2	5	6	.....	.....	.....	41	51	
52 Russell.....	.....	3	1	.....	1	.....	.....	4	1	.....	.....	11	1	.....	.....	.....	51	52	
53 Saline.....	.....	.....	4	1	.....	.....	.....	.....	.....	2	1	.....	.....	.....	.....	.....	19	53	
54 Sedgewick <sup>2</sup> .....	.....	.....	4	1	4	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	67	54	
55 Shawnee.....	3	3	5	1	2	4	.....	3	4	3	1	.....	8	14	12	6	153	55	
56 Sheridan.....	.....	.....	.....	.....	.....	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	56	
57 Sherman.....	.....	1	1	3	.....	.....	.....	.....	.....	2	.....	1	1	2	1	3	21	57	
58 Smith.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	58	
59 Stafford.....	6	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	10	59	
60 Stanton.....	.....	.....	2	3	2	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	11	60	
61 Thomas.....	.....	2	3	4	.....	3	.....	.....	2	.....	.....	3	10	4	.....	.....	52	61	
62 Wabanssee.....	.....	2	6	8	3	.....	1	.....	.....	1	.....	3	3	11	5	12	94	62	
63 Wilson.....	.....	5	7	2	.....	.....	.....	2	5	3	.....	1	4	14	7	2	80	63	
64 Woodson <sup>1</sup> .....	10	4	3	4	.....	5	.....	4	1	.....	7	3	9	14	.....	.....	90	64	
Totals.....	112	145	183	102	59	92	.....	29	53	.....	8	49	51	5	9	36	3	140	3,522

<sup>1</sup> No report for 1891.<sup>2</sup> Five deaths from small-pox in 1886.<sup>3</sup> One death from small-pox in 1888.<sup>4</sup> One death from small-pox in 1889.<sup>5</sup> One death from small-pox in 1888, and two in 1890.<sup>6</sup> Two deaths from small-pox in 1889.<sup>7</sup> Four deaths from small-pox in 1889-90. No report for 1891.<sup>8</sup> Seven deaths from small-pox in 1888.<sup>9</sup> Eleven deaths from small-pox in 1888-89.









40	McPherson.....	7	13	12	9	2	14	2	8	14	12	15	17	1	126	.....	118	167	81	40
41	Mende.....	1	1	1	1	1	1	1	1	1	3	.....	3	.....	13	142	.....	23	41	
42	Miami.....	26	12	18	16	14	10	13	8	15	30	18	5	7	202	136	173	179	42	
43	Mitchell <sup>1</sup> .....	.....	2	.....	2	.....	.....	.....	10	23	30	20	12	.....	88	57	.....	.....	43	
44	Montgomery.....	12	25	26	20	17	22	11	23	30	40	38	38	.....	271	.....	235	227	43	
45	Nenaha.....	15	10	18	9	12	.....	6	12	16	16	15	3	.....	170	48	13	127	45	
46	Nes.....	1	2	4	1	1	1	1	2	.....	2	2	32	.....	24	.....	37	22	47	
47	Norton <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	132	130	.....	48	
48	Osage <sup>1</sup> .....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	11	80	49	
49	Osborne.....	10	9	4	8	7	2	4	6	14	8	8	9	.....	.....	75	90	50	50	
50	Ottawa.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51	
51	Pawnee.....	5	3	4	1	9	3	3	1	4	8	11	21	.....	104	.....	.....	.....	52	
52	Phillips.....	13	4	3	3	4	7	7	4	5	7	7	6	.....	50	113	113	104	53	
53	Pottawatomie.....	5	4	9	5	9	7	5	11	8	14	16	11	.....	104	63	121	104	54	
54	Pratt.....	8	7	5	4	4	3	2	3	3	10	11	15	.....	75	.....	35	.....	55	
55	Rawlins.....	1	3	1	4	3	2	5	2	1	3	5	.....	.....	30	3	41	16	56	
56	Reo.....	8	15	20	13	25	7	14	6	16	19	18	32	.....	193	.....	.....	.....	57	
57	Rooks.....	5	3	1	2	2	4	2	4	8	6	4	13	.....	54	109	93	.....	58	
58	Rush <sup>1</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59	
59	Russell.....	1	5	3	.....	2	1	4	4	6	4	5	10	.....	45	.....	.....	51	60	
60	Saline.....	10	5	9	7	13	9	7	10	8	9	12	25	.....	121	.....	150	98	61	
61	Scott.....	37	25	21	39	15	25	18	23	38	34	46	63	.....	384	523	521	452	62	
62	Sedgwick.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	447	.....	447	.....	.....	.....	63	
63	Shawnee.....	.....	1	3	.....	1	.....	.....	.....	4	4	8	2	.....	25	.....	26	21	64	
64	Sheridan.....	1	3	6	2	4	2	5	5	2	6	3	3	.....	42	3	44	56	65	
65	Sherman.....	12	12	14	12	10	8	8	8	20	16	26	34	.....	180	.....	.....	.....	66	
66	Smith.....	.....	2	1	1	.....	.....	.....	.....	2	3	1	.....	.....	11	.....	.....	8	67	
67	Stanton.....	67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	68	
68	Stevens.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18	.....	69	
69	Thomas.....	2	1	.....	4	3	4	3	1	3	5	2	2	.....	32	31	49	30	70	
70	Wabunsee.....	8	18	14	18	16	12	14	8	2	8	22	22	.....	168	3	10	43	71	
71	Wallace <sup>2</sup> .....	1	.....	2	.....	.....	2	.....	.....	.....	.....	.....	15	.....	13	.....	.....	.....	72	
72	Washington <sup>2</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	.....	35	41	73	
73	Wichita.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....	.....	.....	74	
74	Wilson.....	4	13	15	10	13	4	10	6	1	12	15	8	.....	120	85	133	143	75	
75	Woodson.....	15	12	8	4	4	8	4	4	8	8	8	8	.....	91	26	99	74	.....	
Totals.....	439	478	514	459	416	368	415	604	652	623	865	408	6,710	1,968	3,930	3,764	3,975	2,870	.....	

<sup>1</sup> Failed to report for 1891.<sup>2</sup> County Board of Health not organized until late in 1891.

TABLE No. V.—RETURN OF THE REGISTRATION OF PHYSICIANS AND

No.	NAME.	When registered.	School of practice.	Post-office address.	County.	Age
1	Balfour, C. M.	—, 1890.	Regular.	Morrill.	Brown	32
2	Campbell, P. J.	—, 1890.	"	Willis.	"	44
3	McKnight, Geo. C.	August 17, 1891.	"	Hiawatha.	"	25
4	Phillips, W. B.	—, 1890.	Homeopathic.	Horton.	"	30
5	Reynolds, L.	—, 1891.	Regular.	"	"	"
6	Dickson, N. J.	November 10, 1891.	Midwife.	Towanda.	Butler.	41
7	Hunt, C. E.	October 19, 1891.	Regular.	El Dorado.	"	51
8	Fayette, W. H.	—, 1891.	"	Winfield.	Cowley.	47
9	Ford, A. T.	—, ".	Eclectic.	"	"	59
10	Gardiner, J. R.	—, ".	Regular.	Udall.	"	42
11	Laney, R.	—, ".	"	Maple City.	"	63
12	McKay, W. T.	—, ".	"	Arkansas City.	"	"
13	Morton, D. D.	—, ".	"	"	"	63
14	Porter, F. A.	—, ".	Homeopathic.	"	"	36
15	Hancock, E. A.	—, ".	Eclectic.	Clyde.	Cloud.	25
16	Grigsby, A. C.	—, ".	Homeopathic.	Concordia.	"	"
17	Martin, I. M.	July 27, 1891.	Regular.	Jamestown.	"	26
18	Mitchell, L. B. P.	—, 1891.	"	Ames.	"	25
19	McAsy, E. G.	June 30, 1890.	"	Jamestown.	"	23
20	Esten, E. C.	August 23, 1890.	"	Hall's Summit.	Coffey.	51
21	Evans, P. F.	September 6, 1890.	"	Strawn.	"	33
22	Hanson, J. W.	January 25, 1891.	Homeopathic.	Burlington.	"	48
23	Jones, J. L.	October 29, 1891.	Regular.	Le Roy.	"	41
24	Morgan, J.	November 4, 1891.	"	"	"	52
25	Hamme, J. M.	October 14, 1890.	"	Cottonwood Falls.	Chase.	26
26	Morgan, J. T.	June 6, 1890.	"	"	"	43
27	Baldwin, D. C.	December 28, 1891.	Eclectic.	Hewins.	Chautauqua.	56
28	Bots, J. O.	December 18, 1891.	Regular.	Niotaze.	"	42
29	Courtwright, W. T.	November 9, 1891.	"	Sedan.	"	30
30	Witcher, O. H.	May 14, 1891.	Eclectic.	Grofton.	"	27
31	Langhead, G. G.	January —, 1892.	Regular.	Coldwater.	Comanche.	45
32	Clements, Joseph.	April 2, 1890.	"	McCune.	Crawford.	49
33	Cole, Samuel.	March 31, 1891.	Homeopathic.	Arcadia.	"	50
34	Gilman, Mary E.	February 20, 1891.	Regular.	Pittsburg.	"	27
35	Grant, J. E.	April 29, 1891.	Eclectic.	Englevale.	"	59
36	Lanancus, J. M.	November 4, 1891.	"	Opolis.	"	48
37	Moore, McDonald.	April 19, 1890.	Regular.	Pittsburg.	"	24
38	Nichols, G. B.	March 30, 1891.	Homeopathic.	"	"	40
39	Palmer, Charles.	March 3, 1891.	Eclectic.	Arcadia.	"	18
40	Rupin, A.	February 12, 1891.	Homeopathic.	Pittsburg.	"	25
41	Swan, E. I.	July 15, 1891.	Regular.	"	"	36
42	Gilpin, E. P.	December 21, 1891.	"	Jennings.	Decatur.	43
43	Courtwright, Mary L.	August 25, 1891.	Physio-Medic.	Garden City.	Finney.	40
44	Choteau, A. S.	February 6, 1890.	Regular.	Dodge City.	Ford.	38
45	Crumbine, S. Jay.	"	"	"	"	27
46	Hollopeter, D. J.	"	"	"	"	47
47	McCarty, T. L.	"	"	"	"	46
48	Milton, C. A.	"	"	"	"	37
49	Rose, D. D.	"	"	"	"	46
50	Straup, W. D.	"	"	Bloom.	"	36
51	Suess, H. C.	—, 1890.	Homeopathic.	Ravanna.	Garfield.	48
52	Wilson, M. M.	April 12, 1890.	Regular.	Newton.	Harvey.	25
53	Cowdin, J. P.	—, 1890.	"	Santa Fe.	Haskell.	50
54	Hudson, J. F.	December 3, 1891.	Homeopathic.	Olathe.	Johnson.	46
55	Skinner, H. D.	December 2, 1891.	Regular.	Spring Hill.	"	36
56	McAll, H. B.	May 7, 1891.	"	Lenexa.	"	"
57	Moore, W. M.	January 10, 1890.	"	Olathe.	"	24
58	Chl, W. A.	April 27, 1891.	"	Gardner.	"	31
59	Ashley, W. E.	—, ".	"	Belvidere.	Kiowa.	36
60	Bennett, A. L.	—, ".	Homeopathic.	Greensburg.	"	45
61	Bennett, Mrs. A. L.	—, ".	"	"	"	38
62	Gardner, J. A.	—, ".	Regular.	"	"	38
63	Higby, J. H.	—, ".	"	Wellsford.	"	56
64	Gossett, T. J.	—, ".	Eclectic.	Mullinville.	"	70
65	Moore, W. L.	—, ".	"	Haviland.	"	54
66	Milligan, J. A.	—, ".	Regular.	Greensburg.	"	34
67	Walker, W. P.	—, ".	"	"	"	35
68	Bush, Clara N.	September 10, 1890.	"	Chetopa.	Labette.	27
69	Karn, Mrs. B. J.	December 10, 1891.	Midwife.	Oswego.	"	47
70	Mandigo, D. H.	May 9, 1891.	Eclectic.	Dighton.	Lane.	45
71	Morris, W. H.	May 9, 1891.	Regular.	Utica, Ness Co.	"	48
72	Schneider, Jacob.	November 5, 1890.	"	Lehigh.	Marion.	"
73	Schwandt, Dorothy.	November 21, 1890.	Midwife.	Canada.	"	"
74	Isaac, Susie.	June 11, 1891.	"	Lehigh.	"	"

## ACCOUCHEURS DURING THE YEARS 1890 AND 1891.

Nativity.	No. of years in practice.....	No. of years in Kansas.....	When said diploma was conferred.	Name of college, and place of graduation.
American.....	1	1	—, 1889.....	Chicago Medical College, Chicago, Ill.
"	10	10	"	Chicago, Ill.
"	7	4	March 31, 1891.....	Rush Medical College, Chicago, Ill.
"	8	3	—, 1883.....	Homeopathic Hospital College, Cleveland, Ohio.
"	6		—, 1884.....	Medical Department, University of Iowa.
"	21	4	June —, 1870.....	Detroit, Mich.
"	25	6	—, 1875.....	Chicago Medical College, Chicago, Ill.
"	34	19	—, 1857.....	Eclectic College, Cincinnati, Ohio.
"	15	7	—, 1876.....	Rush Medical College, Chicago, Ill.
"	36	12	—, 1855.....	Cleveland Medical College, Cleveland, Ohio.
"	10	4	February 22, 1887.....	Rush Medical College, Chicago, Ill.
"	42	3	—, 1850.....	Starling, Columbus, Ohio.
"	5	6 mos.	—, 1887.....	Hahnemann Medical College, Chicago, Ill.
"	2	2	March 25, 1889.....	Bennett Medical College, Chicago, Ill.
"	12		—, 1883.....	Homeopathic College, Cleveland, Ohio.
"	6 mos.	6 mos.	June 18, 1891.....	Kentucky Medical College, Louisville, Ky.
"	4 mos.	4 mos.	March —, 1891.....	Hotel Dieu Hosp. Med. College, Victoria, Ont.
"	30	7	"	Bellevue Medical College, New York city.
"	7		"	"
"	20		—, 1880.....	Miami Medical College.
"	19	18	—, 1872.....	Hospital College, Cleveland, Ohio.
"	24	6	—, 1872, 1883.....	Louisville Medical Coll. and Ky. School of Med.
"	1		—, 1867.....	"
"	13		May 1, 1889.....	University of Pennsylvania, Philadelphia, Pa.
"	26	26	—, 1887.....	College of Physicians and Surgeons, Keokuk, Ia.
"	12	12	May 22, 1872.....	Eclectic Medical College, Cincinnati, Ohio.
"	6	3	March 1, 1878.....	Ohio Medical College, Cincinnati, Ohio.
"	6		" 10, 1886.....	"
"	6	1	May 4, 1888.....	American Medical College, St. Louis, Mo.
"	19	6	—, 1876.....	Miami Medical College, Cincinnati, Ohio.
English.....	14	1	January 6, 1890.....	"
American.....	20	1	"	"
"	1		April 2, 1890.....	Woman's Hospital Medical College, Chicago, Ill.
"	31	25	September —, 1857.....	Eclectic, Cincinnati, Ohio.
"	16	7	June —, 1883.....	St. Louis, Mo.
"	3		March 9, 1887.....	Western Reserve, Cleveland, Ohio.
"	14	13	February 19, 1881.....	Hahnemann Medical College, Chicago, Ill.
"	25	6	January —, 1871.....	Bennett College, Chicago, Ill.
"	1	1	June 7, 1890.....	Missouri School of Midwifery, etc.
"	10	9	March —, 1881.....	Missouri Medical College, St. Louis, Mo.
"	18		" 1, 1876.....	College of Phys. and Surgs., Indianapolis, Ind.
"	12	4	" —, 1885.....	Curtis Institute, Marion, Ind.
"	10	6	February —, 1879.....	St. Louis Medical College, St. Louis, Mo.
"	6	5 1/2	" —, 1883.....	Cincinnati Col. of Med. and Surg., Cincinnati, O.
"	22	10	" —, 1876.....	Rush Medical College, Chicago, Ill.
"	18	17	March —, 1870.....	Jefferson Medical College, Philadelphia, Pa.
"	10	8	February —, 1880.....	Rush Medical College, Chicago, Ill.
"	14	4	" —, ".....	Med. Dept. Univer. of Louisville, Louisville, Ky.
"	15	6	" —, 1876.....	Rush Medical College, Chicago, Ill.
"	16	6 1/2	" 25, 1875.....	Homeopathic College of Missouri, St. Louis, Mo.
German.....	16	6 1/2	March 11, 1878.....	Hahnemann Medical College, Philadelphia, Pa.
American.....	4	6 mos.	—, 1889.....	Detroit College of Medicine, Detroit, Mich.
"	24	6	February 4, 1867.....	Rush Medical College, Chicago, Ill.
"	10		—, 1885.....	Pulte Medical College.
"	10		March —, 1881.....	Medical College of Indiana.
American.....	1	4	—, 1884.....	Kansas City Medical College.
"	9	9	—, 1882.....	St. Louis Medical College, St. Louis, Mo.
"	10	7	March 1, 1881.....	Ft. Wayne College of Medicine, Ft. Wayne, Ind.
"			"	Harvard Medical College, Boston, Mass.
"			"	Cleveland, Ohio.
"	15	15	March 1, 1876.....	Rush Medical College, Chicago, Ill.
"	32	10	" 1, 1858.....	Transvalia, Lexington, Ky.
"			"	Eclectic Medical College, Cincinnati, Ohio.
"	28	6	March 1, 1861.....	"
"	10	7	" 1, 1883.....	College of Phys. and Surgs., Indianapolis, Ind.
"	12	7	" 1, 1879.....	Rush Medical College, Chicago, Ill.
"			February 29, 1890.....	College of Physicians and Surgeons, Keokuk, Ia.
"	11	11	"	"
"	11	11	"	"
"	12	7	"	"
Russian.....			August 4, 1864.....	Des Moines, Iowa
German.....			May 30, 1891.....	Saratow Medical College, Russia.
				Newland's College for Midwives.

TABLE NO. V.—RETURN OF THE REGISTRATION OF PHYSICIANS

No.	NAME.	When registered.	School of practice.	Post-office address.	County.	Age
75	Porter, E. J.	October 29, 1890.		Marion.....	Marion.....	
76	Torrance, G. H.	April 15, 1891.....	Regular.....	Axtell.....	Marshall.....	28
77	Van Vleet, J. R.	April 2, 1891.....		Frankfort.....	".....	38
78	Brennan, M. N.	October 13, 1891.....	Homeopathic.....	Roxbury.....	McPherson.....	32
79	Egler, Andrew.....	January 18, 1890.....	Regular.....	McPherson.....	".....	27
80	Holdeman, D. S.	December 22, 1890.....	Homeopathic.....	Elyria.....	".....	65
81	Howry, S. S.	April 1, 1891.....	Regular.....	Moundridge.....	".....	41
82	Mammel, F.	October 9, 1891.....	Eclectic.....	McPherson.....	".....	46
83	Matchette, G. H.	November 20, 1891.....	".....	".....	".....	39
84	Richardson, F.	October 9, 1891.....	Homeopathic.....	Windom.....	".....	38
85	Lewis, A. A.	November 25, 1891.....	Midwife.....	Conway.....	".....	61
86	Rose, L. P.	September 29, 1890.....	Regular.....	Elyria.....	".....	32
87	Bauta, H. M.	September —, 1890.....	Eclectic.....	Ruland.....	Montgomery.....	56
88	McGuire, J. M.	May —, 1890.....	".....	Caney.....	".....	39
89	St. Clair, J.	January 13, 1891.....	Physio-M'dic'l.....	Independence.....	".....	45
90	Price, S. F.	August 17, 1891.....	Regular.....	Beagle.....	Miami.....	27
91	Brown, J. H.	January 6, 1891.....	".....	Wetmore.....	Nemaha.....	35
92	Everhard, J. J.	December 22, 1890.....	".....	Seneca.....	".....	61
93	Corwin, S. A.	October 29, 1891.....	".....	Goffs.....	".....	31
94	Ennis, J. M.	March 3, 1890.....	".....	Seranton.....	Osage.....	39
95	Zane, T. M.	November 11, 1891.....	".....	Osage City.....	".....	38
96	Brubaker, J. F. R.	August 23, 1891.....	".....	Tescot.....	Ottawa.....	32
97	Brewer, J. F.	October 12, 1891.....	".....	Minneapolis.....	".....	36
98	Hill, W. M.	November 8, 1891.....	Eclectic.....	Atwood.....	Rawlins.....	61
99	Pickrel, J. F.	October 8, 1891.....	Regular.....	Herdon.....	".....	27
100	Rasse, L. P.	August 18, 1890.....	".....	Valley Center.....	Sedgwick.....	
101	Romine, Wm. R.	March 9, 1891.....	Eclectic.....	Wichita.....	".....	
102	Bezanson, C.	April 2, 1891.....	".....	".....	".....	42
103	Bohneng, A. H. R.		Regular.....	Andale.....	".....	36
104	Boughton, Wm. T.	October 26, 1891.....	".....	Wichita.....	".....	54
105	Lewis, Geo. F.	October 26, 1891.....	".....	".....	".....	49
106	Bower, W. C.	January 7, 1891.....	".....	Lebanon.....	Smith.....	29
107	Hester, Mrs. A.	March 4, 1891.....	".....	Stuart.....	".....	57
108	McCammon, J. A.	June 9, 1891.....	Regular.....	Reamsville.....	".....	44
109	Mullinix, E. N.	December 30, 1891.....	".....	Smith Center.....	".....	47
110	Pounds, Mrs. M. R.	June 17, 1891.....	".....	".....	".....	63
111	Ebnother, C. L.	March 20, 1890.....	Regular.....	Hugoton.....	Stevens.....	36
112	Furnass, R. F.	March 29, 1890.....	Homeopathic.....	Lafayette.....	".....	60
113	Hackett, V.	August 15, 1891.....	".....	".....	".....	59
114	Hackett, T. E.	October 10, 1891.....	".....	".....	".....	56
115	Dicken, C. C.	August 9, 1891.....	Regular.....	Eskridge.....	Wabauasee.....	33
116	Bobo, C. W.	May 18, 1891.....	Eclectic.....	Wallace.....	".....	30
117	Burns, Mrs. B.	November 13, 1891.....	Regular.....	Hanover.....	Washington.....	40
118	Hallowell, D. J.	—, 1891.....	".....	Enosdale.....	".....	48
119	Harris, Mrs. A. E.	June 12, 1891.....	Obstetrician.....	Day.....	".....	41
120	Hoover, J. H.	December 16, 1891.....	Regular.....	Haddam.....	".....	36
121	Kling, Mrs. E.		Obstetrician.....	Hollenberg.....	".....	44
122	Scheetz, Mrs. C.		".....	Hanover.....	".....	52
123	Smith, J. G.		Regular.....	".....	".....	32
124	Haradon, E. W.	May 17, 1890.....	".....	Yates Center.....	Woodson.....	27

The returns rendered by County Health Officers include the names of twenty or more physicians whose date of registration, being in January, 1892, precluded their more particular mention in this report.

## RECAPITULATION.—TOTAL REGISTRATION TO DATE.

YEAR.	Regular.	Eclectic.	Homeopathic.	Various.	Midwives.
1857.....	1,524	382	197	201	135
1888.....	162	40	26	32	28
1889.....	101	21	21	21	7
1891.....	76	18	17	3	10
Totals.....	1,863	461	261	257	180

Aggregate, physicians..... 2,843  
Midwives..... 180

Grand aggregate..... \*3,022

\* Approximately correct only. Many physicians have refused or failed to register, and there have been, doubtless, many removals from the State not considered.

## AND ACCOUCHEURS DURING THE YEARS 1890 AND 1891—CONCLUDED.

Nativity.	No. of years in practice.....	No. of years in practice in Kansas.....	When said diploma was conferred.	Name of college, and place of graduation.
American.....	1	1	February 26, 1878.....	Rush Medical College.
".....	1	1	"....., 1890.....	Indiana Medical College, Indianapolis, Ind.
Canadian.....	6 mos.	6 mos.	March —, 1891.....	Ensworth Medical College, St. Joseph, Mo.
Swede.....	6	6	"....., 1886.....	Hahnemann College, Chicago, Ill.
American.....	3	3	March 15, 1886.....	Bellevue Hospital Medical College, New York.
German.....	8	1	March 14, 1889.....	St. Louis Medical College, St. Louis, Mo.
American.....	6	6	January 17, 1891.....	American Medical College, St. Louis, Mo.
".....	16	5	May 16, 1878.....	".....
".....	13	13	".....	".....
".....	".....	".....	".....	".....
".....	14	5	"....., 1856.....	Louisville Medical College, Louisville, Ky.
".....	5	3	"....., 1885.....	St. Louis Medical College, St. Louis, Mo.
".....	22	".....	"....., 1868.....	Louisville Medical College, Louisville, Ky.
".....	".....	".....	"....., 1868.....	Physio-Medical, Cincinnati, Ohio.
".....	5	1	June 25, 1891.....	Ann Arbor.
".....	33	6 mos.	"....., 1885.....	Medical College of Ohio, Cincinnati, Ohio.
".....	6	4	"....., 1857.....	Rush Medical College, Chicago, Ill.
".....	16	12	"....., 1890.....	University Medical, Kansas City, Mo.
".....	15	6	"....., 1872.....	Kentucky School of Medicine, Louisville, Ky.
".....	7	6	"....., 1877.....	Missouri Medical College, St. Louis, Mo.
".....	2	2	March —, 1885.....	College of Physicians and Surgeons, Baltimore.
".....	21	".....	"....., 1889.....	University Medical College, Kansas City, Mo.
".....	5	5	"....., 1853.....	Cincinnati, Ohio.
".....	".....	".....	"....., 1891.....	Rush College.
English.....	12	10	".....	".....
German.....	6	5	June 4, 1884.....	Baltimore Medical College, Baltimore, Md.
American.....	20	".....	March 23, 1881.....	Galligen University, Hanover.
".....	25	".....	July —, 1866.....	College of Physicians and Surgeons, Keokuk, Ia.
".....	6	5	February 16, 1886.....	Yale University, New Haven, Conn.
".....	12	12	".....	Rush Medical College, Chicago, Ill.
".....	13	10	".....	".....
".....	20	3	"....., 1872.....	Eclectic Medical Institute, Cincinnati, Ohio.
".....	30	15	".....	".....
Swiss.....	9	6	April 6, 1883.....	State University of Iowa, Iowa City.
American.....	25	8	".....	Pulte Medical College, Cincinnati, Ohio.
".....	20	3	".....	".....
".....	15	8	".....	".....
Scotch.....	11	5	April 22, 1880.....	Halifax Medical College, Nova Scotia.
American.....	2	".....	June 4, 1889.....	Eclectic Medical Institute, Cincinnati, Ohio.
German.....	16	9	"....., 1875.....	Marborough, Germany.
American.....	21	15	February 24, 1876.....	Physicians and Surgeons, Keokuk, Iowa.
".....	18	4	".....	".....
".....	16	11	March 5, 1886.....	Ensworth, St. Joseph, Mo.
German.....	".....	".....	".....	".....
".....	14	13	".....	".....
American.....	1	".....	March 4, 1891.....	Ensworth, St. Joseph, Mo.
".....	4	".....	"....., 1886.....	State University of Iowa, Iowa City, Iowa.





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SUPPLEMENT.

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# STATE SANITARY CONVENTION.

HELD AT SALINA, KANSAS, DECEMBER 3 AND 4, 1891.

Resolution of the State Board of Health relative to the publication of papers in its annual report :

*Resolved*, That no papers shall be published in the annual report of this Board except such as are ordered or approved for purposes of such publication by a majority of the members of the Board; and that any such paper shall be published over the signature of the writer, who shall be entitled to the credit of its production, as well as responsible for the statements of facts and opinions expressed therein.

## PROGRAMME.

### FIRST SESSION—THURSDAY, DECEMBER 3, AT 7:30 O'CLOCK P. M.

1. Convention called to order, by J. W. Jenney, M. D., Salina, member State Board of Health.
2. Music.
3. Invocation, by Rev. F. D. Baker, Salina.
4. Address of Welcome, by Hon. Smith George, Mayor of Salina.
5. Response, by Hon. J. G. Mohler, Salina, President of the Convention.
6. Statement of the Objects of the Convention, by G. H. T. Johnson, M. D., Atchison, President State Board Health.
7. Germ Diseases among Insects, by Prof. F. H. Snow, Lawrence, Chancellor State University.
8. The Peremptory Phase of Municipal Government, by Hon. T. F. Garver, Salina.

### SECOND SESSION—FRIDAY, DECEMBER 4, AT 9 O'CLOCK A. M.

1. Music.
2. Man, Physical and Ethical; or, Body and Mind in Character and Life, by Rev. W. Bishop, Salina.
3. School-Room Sanitation, by Prof. C. Y. Roop, Superintendent Salina City Schools.
4. Sanitation vs. Do-Nothingism, by W. B. Dewees, M. D., Salina.
5. The Water Supply and Sewerage of Salina, by F. B. Brown, M. D., Salina.

### THIRD SESSION—FRIDAY, DECEMBER 4, AT 1:30 O'CLOCK P. M.

1. Sanitary Principles in Family Life, by Mrs. F. D. Baker, Salina.
2. Watchman, Tell Us, by W. A. Phillips, jr., M. D., Salina.
3. The Relation of Habit to Health and Disease, by Prof. Charles Swisher, Normal University Salina.
4. The Ethics of Applied Physiology, by N. D. Tobey, M. D., Salina.
5. The Influence of the Mind on the Body, by Rev. A. Schuyler, President Kansas Wesleyan University, Salina.

### FOURTH SESSION—FRIDAY, DECEMBER 4, AT 7:30 O'CLOCK P. M.

1. Music.
2. Report of Dr. R. A. Williams, Olathe, member of the State Board of Health, and Delegate from the State Board of Health to International Congress of Hygiene and Demography, London, 1891.
3. Public Health Laws, by R. A. Burch, Esq., Salina.
4. Diphtheria at Wichita, by P. D. St. John, M. D., Wichita, County Health Officer and Secretary Wichita Board of Health.
5. The Effect of Alcohol upon the Human System, by D. R. Pelton, M. D., Topeka.
6. Closing the convention.
7. Music.

## OBJECTS OF THE CONVENTION.

The objects of the convention are the presentation of facts, the comparison of views, and the discussion of methods relating to the prevention of sickness and of untimely deaths.

This is not a medical convention, but it is for the people generally.

The admission to all sessions of the convention will be free to the public, and ladies are cordially and especially invited. The invitation is especially extended to Health Officers to be present and take part in the discussions, but a general discussion is invited.

Authors of papers are requested to limit them to 20 minutes. The speakers who lead the discussions are to be allowed 10 minutes each; all others five minutes.

The papers are expected to be original contributions, which, when read, are to be considered the property of the convention, to be left with the Secretary.

All sessions will be held in the chapel of the Methodist Church.

Representatives of the press cordially invited.

## PROCEEDINGS.

The convention was held at Salina pursuant to an invitation from the Commercial Club and citizens of that city, extended a year ago. The arrangements for the meeting were perfected through a committee of the State Board of Health, in coöperation with a committee of the citizens of Salina, as follows:

## COMMITTEE FROM THE STATE BOARD OF HEALTH.

G. H. T. JOHNSON, M. D., Atchison.

D. C. JONES, M. D., Topeka.

R. A. WILLIAMS, M. D., Olathe,

ANDREW SABINE, M. D., Garden City.

H. D. HILL, M. D., Augusta.

M. O'BRIEN, M. D., Topeka.

## LOCAL COMMITTEE.

R. P. CRAVENS.

L. A. WILL.

T. D. FITZPATRICK.

A. P. COLLINS.

J. O. WILSON.

M. J. WEISSLAGER.

The officers of the convention were as follows:

## PRESIDENT.

HON. J. G. MOHLER, Salina.

## VICE PRESIDENTS.

HON. R. P. CRAVENS, Salina.

HON. T. A. OSBORN, Topeka.

HON. E. N. MORRILL, Hiawatha.

HON. T. MCCARTHY, Larned.

HON. W. M. RICE, Fort Scott.

HON. ED. CARROLL, Leavenworth.

HON. H. P. WILSON, Wa Keeney.

HON. G. L. DOUGLASS, Wichita.

HON. R. W. M. ROE, Grenola.

HON. P. P. ELDER, Princeton.

HON. W. J. BUCHAN, Kansas City.

HON. T. B. MURDOCK, El Dorado.

HON. G. W. GLICK, Atchison.

HON. F. M. LOCKARD, Norton.

HON. F. P. HARKNESS, Clay Center.

HON. J. R. BURTON, Abilene.

HON. DAVID SHULL, Scranton.

HON. C. I. LONG, Medicine Lodge.

HON. WM. ROGERS, Barnes.

HON. A. W. SMITH, McPherson.

## SECRETARIES.

CHARLES W. BURCH, Salina.

DR. M. O'BRIEN, Topeka.

## FIRST SESSION.

DECEMBER 3, 7:50 o'clock P.M.

The convention was called to order by Dr. J. W. Jenney, of Salina, member of the State Board of Health, who, in a few fitting remarks, presented the president of the convention, Hon. J. G. Mohler, of Salina.

Music by the Y. M. C. A. quartette club of Salina. Invocation—Rev. F. D. Baker, of Salina.

Hon. T. F. Garver, of Salina, on the part of Mayor George, delivered an address of welcome, commending the objects of the convention, and extending to its officers and visiting members the hospitalities of the city. Brief response by the president.

Letters of regret were read from Governor Humphrey, ex-Governor Osborn, Hon. P. P. Elder, Speaker of the House of Representatives, Representatives David Shull, George L. Douglass, Wm. M. Rice, State Senators C. I. Long, H. P. Wilson, Hon. E. N. Morrill, Hon. T. McCarthy, and others.

Governor Humphrey wrote:

I understand, of course, that this convention is to be held under the auspices of the State Board of Health, and personally I should be glad to attend, and by my presence, at least, signify the interest which I feel as a citizen, as well as an official, in the commendable efforts of your Board to stimulate and build up a more widespread public interest in the subject of the public health, and of those various matters which come within the scope and purpose of your labors as a Board. In other words, I realize that you are doing an educational work in a new line, so far as Kansas is concerned, and one of the very highest importance to the people of the State.

The matter of sanitation, and the work of disseminating information on the subject, should enlist the hearty coöperation of every good citizen, especially in the more populous cities and communities. It is a work which touches the public interest vitally and at a thousand points, and I am glad to acknowledge and cordially indorse the earnest and persistent efforts of yourself, and of the Board of Health as a body, in the direction of educating the people to a realization of the importance of protecting and promoting the public health, and in the dissemination of sanitary knowledge. There is need of further legislation in Kansas on this subject, and I have no doubt it will be brought about in due time.

I desire to express the hope that your forthcoming convention will be in every way successful and profitable, regretting only that I must deny myself the pleasure of being with you.

Ex-Governor Osborn wrote:

In any event, you may record me as present with you in spirit. I can conceive of no subject more needful of careful consideration and discussion than that which you will have before you.

Disease and premature death may be minimized by a proper observance of sound sanitary principles, and it is to the accomplishment of this object that I understand your efforts to be directed. Most truly, a worthy object; and you deserve, as you will doubtless receive, the support of all good citizens.

Commending the Board of Health for the interest it is taking in matters affecting the health of the people, and wishing you ample success at your conference, I am, etc.

Hon. Wm. M. Rice wrote:

I can see how such a convention may prove of great benefit, and especially in the matter of suggesting the regulation of the water supplies to our cities. As it is now, the cities have, practically, no control over the streams from which they receive their water, which, outside of Topeka, Atchison, Leavenworth, and possibly Wichita, is a very serious matter. The question has given our people here very serious consideration.

There are many other kindred questions that you may consider with propriety and which I should like to hear discussed.

Following the reading of these letters, Dr. G. H. T. Johnson, President of the State Board of Health, read the following paper upon

#### THE OBJECTS OF THE CONVENTION.

A much higher value is placed on human life and more intelligent effort made to prolong it in the present age than in any of the past centuries. We need not go very far back into the history of our race to read of the devastating epidemics which depopulated whole countries, leaving in their cruel march indescribable scenes of woe and death. The historian informs us that by one visitation of the plague in Europe, in the fourteenth century, 25 millions of people lost their lives, and four times as many more must have been afflicted with this disease. The wise men of those times did not send for a health officer, or seek for the cause of the epidemic in the unsanitary surroundings, but attributed it to some occult influence or the visitation of Divine Providence. While, with our advanced civilization and general intelligence, it is not probable that an epidemic with such a fearful mortality as that of the fourteenth century will ever spread its deadly pall over our fair land, yet there is a great waste of valuable life taking place annually. The deadly march of epidemic diseases is still unstayed. Diseases which are wholly preventable carry off their victims by the hundreds of thousands annually.

Within the last two decades this country has been scourged by many costly epidemics, resulting in not only a great loss of valuable life, but involving the loss of immense sums of money. The city of Memphis, with its impure water supply, no adequate system of sewerage, with filthy streets and rotten and festering pavements, was visited by a terrible scourge of yellow fever in 1879, which almost depopulated the city, leaving only 5,000 white citizens. In the dark hour of their great adversity they called upon the health officers and sanitary engineers to take charge of the city, which was but little better than a charnel-house. They reconstructed the streets of the city, building miles of new pavements and sewers, building outhouses connected with the new sewers, and made it possible for the people to have a pure supply of water, to breathe pure air, and live healthy lives. As a result of the efficient sanitary work pushed forward by the health authorities, Memphis has never since been revisited by an epidemic of yellow fever, and has become one of the great commercial cities of the Southwest. The death rate before this sanitary renovation was 92 in each thousand of whites and 144 to the thousand among the blacks, while at present it is less than one-fourth of this per cent.

The history of health boards in this country only goes back a quarter of a century, and in most States a much shorter time than this; yet they have accomplished an immeasurable amount of good—reducing the mortality rates, robbing small-pox, yellow fever and other contagious diseases of many of their terrors, and making life, happiness and health more secure, and adding much to the general prosperity of the people.

In England, where vital statistics are kept more accurately than here, and in Lon-

don, where sanitary measures have been enforced for the past 50 years, the death rate has been reduced during this time from 80 per 1,000 to 21 per 1,000. A recent report of the registrar general shows that in the last two decades two years have been added to the average life of the people. In the United States the average death rate is about 20 per 1,000; not far from 1,250,000 of our people die annually. Many of our close-observing and well-posted physicians believe that from one-third to one-half of these deaths are preventable under wise sanitary regulations.

The census of 1880 shows that more than one-half of the annual death rate is made up of children under five years of age. That this great waste of young life is unnecessary, is proven by reliable statistics, which show that in well-governed institutions for children between the ages of 3 and 15 the death rate can be reduced to less than one-third that shown by the census. These young and tender life plants succumb to the deleterious influences of unhealthy surroundings in much greater numbers than those of maturer years, so that sanitarians have estimated the good or bad sanitary conditions of the people by the mortality of their children. Is there not something touchingly pathetic in the deplorable fact that from one-fourth to half a million of innocent and helpless children under the age of 10 years die annually in the United States from unnecessary diseases?

Many more startling facts and statistics might be given to prove the great and almost criminal waste of human life. This is admitted by all intelligent people who have given any thought to this subject. The pressing and imperative duty of the hour is to apply a remedy to this deplorable condition of things. Lord Derby long ago declared that "no sanitary improvement worth the name will be effective unless you create an intelligent interest in the matter among the people at large." This awakening of the public interest in sanitation is, as I conceive it, the object of this and all similar conventions. We must not only have wide-awake and competent Health Officers, but they must be supported and encouraged by an intelligent and sympathizing public.

In Kansas it has sometimes been the unfortunate experience of Health Officers that their efforts for the public good are not always appreciated. This indifference on the part of many of our intelligent people is, doubtless, partly due to the fact that nature made Kansas a great sanitarium. Her eastern border is marked by a great river whose waters, unpolluted by man, are the purest in the world. The high uplands of middle Kansas, and the higher plains of her western border, are swept by mighty winds that leave all animal creation pulsating at a higher standard of life; the surface of her virgin soil is as yet unpolluted by the filth that accumulates in densely-populated countries; therefore we have been, in a large measure, exempt from the contagious and other filth diseases which are so destructive to life in older communities.

This fortunate exemption from disease, which has rendered our people careless, will not always continue, unless we act wisely by making provision now for the protection of the future health of our people. Crowd five or seven millions of people within the borders of Kansas, and, unless the wisest sanitary measures are enforced, the rate of mortality will almost double, and the rate of sickness greatly increase. The present and the near future is the all-important time to make ample provision for the protection of the lives and health of the future Kansans. Healthy or unhealthy homes are yet to be constructed for these coming millions. Cities are to be built, with their thousands of healthy homes, their public buildings, their pure water supply, their wisely-constructed sewers, and vitrified-brick pavements. Whether all these improvements shall be made wisely and well, depends largely on the intelligent interest taken by the people at large, for if they are indifferent, those having charge

of these important improvements will become careless, and the increase of sickness and death will follow as the night the day, and the frequent outbreaks of the deadly epidemics will bring woe, misery and death to many homes.

If we shall on this occasion set in motion a train of influence that shall make sickness and death, with their attendant woe and misery, less frequent; that shall, in a measure at least, stay the deadly march of the epidemic; that shall result in lifting our people to a higher plane of health, prosperity, and happiness, we shall have fully accomplished the beneficent object of this convention.

At the conclusion of Doctor Johnson's paper, Prof. F. H. Snow, Chancellor of the State University, delivered an address, extemporaneously, upon "Germ Diseases among Insects." Chancellor Snow's address was well illustrated by charts and drawings, and was received with marked interest.

He began by noting the peculiarity of his being invited to take part in a convention the duty of whose members, and the purpose of whose deliberations, were to overcome and suppress disease and preserve health, while his mission was to propagate disease germs for the destruction of life—but, to be sure, not human lives.

In proceeding, he paid high tribute to the microscope as being essential to scientific investigations in almost every line of research. Especially is it useful in the examination of germs and parasitic organisms. By its use alone we may be relieved of many fears and apprised of many dangers that beset us. He was reminded, in this connection, of the dire apprehensions of disease which followed the discovery of a certain green scum upon the waters of the Kansas river, in the vicinity of Lawrence, Kas., in the fall of 1890. Upon examination, the scum was found to be composed of minute organisms not at all injurious to the human system.

He exhibited the form and appearance of the germs of diphtheria, consumption, and other diseases, and explained their reproduction and the many changes attendant thereupon, and referred to the danger from contact with these diseases.

The germs of putrefaction were illustrated. They were the most numerous family of germs, and the most rapid in multiplication, several millions being produced from a single germ in a few hours.

The speaker next discussed the propagation of diseases among chinch-bugs. He had not been alone in the study of this subject. Professor Forbes, of Illinois, had also been investigating it, but they had labored separately and independently of each other. They had, however, frequently conferred upon the theory and progress of the work. Professor Forbes, knowing the rapidity with which germs are propagated, determined to create an artificial culture of their diseases in water, to be sprinkled upon the bugs in the field, with the purpose of thereby spreading the disease. This method had failed in practice.

The speaker's position was, that this terrible pest to the farmer of the Mississippi and Missouri valleys is subject to certain well-defined diseases,



which can be so propagated and spread among them as to eventually eradicate the bug. He had experimented with three diseases, one being bacterial in origin, the other two fungous in character.

His method of cultivating the disease was to secure a few diseased bugs, putting them in a large glass whose bottom was covered with damp sand. They were kept well supplied with green wheat. As many healthy bugs as could be secured were then put into the jar. In 13 days nearly every bug would be dead.

As demands came in, a half-dozen dead bugs were put in a pill box and sent out. The farmers were instructed to put 200 or more bugs into a jar with the infected bodies. Within 24 hours these bugs would catch the disease. They were then turned loose in the wheat field. Within three days the bugs would be dying fast, and within 12 days the ground would be covered with their dead bodies. The work of destruction continued as long as there remained live bugs.

The bacterial disease could not be so successfully produced, because of the rainy season, but the fungous diseases were rapidly produced. The only way to infect a chinch-bug was to bring him against a sick bug, and when that had been done he was invariably infected.

The demand had been so great that he could not always supply the infecting material. In at least 90 per cent. of the cases reported to him the treatment had proved effective. He had sent out 2,000 packages during the past season, and expected about 1,000 reports, of which 700 or 800 would be favorable. There had been 400 farms literally cleared of bugs.

The farmers did not all report, and some unfavorable reports were received, but he was convinced that in many of these cases the work had not been carefully conducted. Again, carelessness in examination gave rise to unfavorable reports. He cited a case of this kind, in which he had sent out a student of the University to examine into the facts, and he had reported finding many dead bugs. It was found that the fungus had entirely covered the bugs, so changing their appearance as to escape the observation of the complainant.

Hon. M. Mohler, Secretary State Board of Agriculture, in discussing Chancellor Snow's address, claimed it was a great triumph to be able to thus utilize disease, the agency of death, and which, in our ignorance, worked our destruction, but which we could now use so effectively in the destruction of our numerous enemy, the chinch-bug. He believed that, were the facts to be correctly reported, it would be found that the infection procedure had proved an universal success. He dwelt upon the incalculable benefits of this discovery to the State as a whole. He had been asked after the drouth of 1887 to estimate which had produced the greater loss, the drouth or the chinch-bug, and had unhesitatingly stated that the depredations of the bug had produced as great a loss, at least, as the drouth itself. In closing, he paid a high tribute of praise to Chancellor Snow for having developed this

branch of science, stating that this was probably the opening of a great field of investigation which would overcome in time many other of the evils which now beset agriculture.

The next address was by Hon. T. F. Garver, of Salina, upon

#### THE PEREMPTORY PHASE OF MUNICIPAL GOVERNMENT.

The law of necessity occupies a wide space in the field of jurisprudence. Closely allied to it is the law of expediency. The one has to do with those things which are deemed essential to self-existence or which are absolute requirements for the proper enjoyment of legal rights. The other concerns itself rather with methods, formulating plans and adopting rules by which desirable ends may be accomplished. These two comprise almost the entire category of public law. To one or the other class belongs nearly every public legislative enactment; and it must find its justification as a command to, or a requirement of, the individual, as a citizen, in the public necessity or general utility which calls for its observance.

These principles are so elementary in their character, and so fundamental in their application, that we as individuals grow up with them, unconsciously making them a part of our lives. We might almost designate them as instinctive principles of animal life, which need no argument to prove either their existence or their operation. In ourselves, then, we may first find an exemplification of the law as it is more largely applied to governmental concerns. Were it not for the selfishness of men, the world could well dispense with much of the governing to which it is now subject. The focus of the glasses through which the average man looks so constantly changes, that it is the nearest thing to the impossible for him to take the same view of his own and his neighbor's rights. The one is magnified in importance, while the other is contracted or quite lost sight of. As a consequence, some one is always suffering at the hands of others. The chariot wheels of success ruthlessly roll over the necks of the less fortunate who fail to seek safety by the way-side. No man who is wholly intent upon that which concerns self lives up to his natural duty as one among the many; neither can he hide from himself the wrecks of the hopes and prospects of others with whom he comes in contact.

The indifference and unconcern of another class, both as it affects themselves as well as others, is a fertile source of discomfort and injury. This class of people seems utterly lacking in that higher appreciation of individual well-being, which is an incentive to such effort as will foster present advantages and add to the sum of present comforts. They are the people who litter the door yards of their neighbors with the filth and husks of life, because they themselves are satisfied to feed on husks and live in the midst of filth. They domesticate swift-winged evils, and fondle, as pets, heavy-footed impurities. Their firesides are made warming places for the frozen serpents of the earth, which, having received a new touch of life, glide into their and other households with poisonous stings. Their gardens bloom with flowers whose petals drip virus, and whose perfume is the breath of death. These are they who often profess so much in the name of personal liberty; a term most shamefully dishonored by those who would, under its guise, ignore and trample on the rights of others. You have the right to occupy a certain portion of the sidewalk in going down street, and are at liberty to do so. Your right, however, is not superior to that of your neighbor, who may also have the desire to occupy it. If you and he conclude to exercise these equal rights at the same time, what then? One of two things must follow: collision or compromise. Who shall decide? It is the personal right of every one to own property, and to earn a livelihood by the pursuit of a legitimate business. The profits to be obtained may be sufficiently alluring to induce one to start

a soap factory; and the advantages of location may call for the selection of a certain place near to the habitations of others. The business is legitimate and respectable; the location is the property of the one who wishes to thus utilize it. Others, who are living in the same locality, own homes in which they have the right to continue in peace and comfort. But the odorous visitations from the soap factory drive sleep from the eyelids, food from the stomach, and strength from the knees. The question is soon propounded: Is this life worth living?

Here are conflicting interests to be settled; hence the necessity of government and governmental control. In these varied circumstances, and in the midst of the conflicting interests of life, there must be an intelligent mind to comprehend them, and a supreme power to control and regulate the conduct and course of each individual in such a way as will best subserve and advance the welfare of all. Civil government in this respect is simply the concerted action of the individuals comprising a community, by which they endeavor to so regulate or limit that which each may do as will insure to every other one the fullest possible enjoyment of his personal rights and advantages. The exercise of these powers, as they relate to the security and protection of the people in the common concerns of every-day life, is, for the most part, intrusted to the municipalities of the State. In their larger organization as a State, the people establish general lines of policy, and adopt general rules and regulations for government. The State is the source of municipal authority; to it we must look for the creation and limitation of police powers. The right to prescribe what may or may not be done, the authority to regulate, to prohibit, and to punish, is delegated power, which the town or city administers in accordance with the broader laws of the State. While the State surrenders none of its powers, it is as members of a simple municipality that we most frequently meet with this higher authority, which marks out for the individual the path to be pursued when commingling with others, and peremptorily requires that such path be followed. The close relationships that exist between those who live in compact communities require that the popular will be manifested through an agency that is capable of prompt and thorough action. The framers of our laws wisely foresaw that innumerable contingencies would arise in places where people thus crowd together, which could in no way be as intelligently and successfully attended to as by those composing such communities with common interests. Thus we find the people of this city, and the other cities of the State, clothed with such police powers as enable them to accomplish those things which they deem conducive to the public good. This "police power" extends to the protection of the lives, limbs, health, comfort and quiet of all persons, and the protection of all property. Blackstone defines this power as "the due regulation and domestic order of the kingdom, whereby the individuals of the state, like members of a well-governed family, are bound to conform their general behavior to the rules of propriety, good neighborhood, and good manners; and to be decent, industrious and inoffensive in their respective stations"—a definition as clear and comprehensive as can be penned, even when applied to a city.

In no way are the principles underlying our popular form of government so clearly and pointedly brought to our attention as they are by the manner in which the people of every municipality are left to govern themselves. The rules and police regulations to be adopted are not prescribed by the State; neither are the ways to be followed hedged about so as to leave no choice. We may do well or ill in the administration of the trust placed in our hands, and be within the letter of the law. As a municipality, our thought and action, in most things, are independent of every consideration except our own interest. We have a wide scope for the exercise of the highest selfishness as to material advancement, and for the most enlarged wisdom in adopting measures for the prosperity, comfort and happiness of the people.

This extensive power is conferred upon the municipality by legislative enactment, which provides that it "shall have power to enact any and all ordinances not repugnant to the constitution and laws of the State, and such as it shall deem expedient for the good government of the city, the preservation of the peace and good order, the suppression of vice and immorality, the benefit of trade and commerce, and the health of the inhabitants." The language used places, in unmistakable terms, upon the people of the city a responsibility of vast importance, and leaves it with them, without abridgment or limitation, except the general laws of the land on the one hand, and their own judgment of necessity or expediency on the other. The exercise of this power, in many directions, is purely discretionary, so far as legal responsibility goes. But, when exercised, the enactments of the city and the regulations adopted become for the individual the imperative commands of sovereignty. The strong arm of legal authority reaches into the domain of private conduct whenever such conduct sends out influences which invade the sphere of others. It is no part of the duty of government, whether municipal, State, or national, to intrude upon the privacy of the individual, or to assume supervision and control of him as a mere man. It is only when one becomes inseparably linked with others, and takes his place as a component part of the populace, that he must compromise with his natural desires, and eliminate from his voluntary action whatever is hurtful to this greater whole. He then becomes a responsible part of a new creation, and assumes a dual life. In the new relation, he is but a member of a body politic having interests of a secondary nature, which must be held subservient to those larger and more general interests of the many. Individual rights are not objects of municipal protection. Civil liabilities are not created, though they may be regulated, by ordinance.

Corporate power, thus created, and capable of such diverse application, is a most important and sacred trust. With the opportunity for action, and the possibility of great accomplishments, comes mighty responsibility. This is not lessened by a consideration of the fact that there is always danger of an abuse or misuse of power. The individual surrenders many of his primordial rights in order that he may be the recipient of those higher advantages which belong to citizenship. Having made this sacrifice, he has a just claim upon the municipal organization to which he belongs, that every right of the citizen, as such, be fully protected, and that those enlarged powers of government be actively exercised for the accomplishment of the greatest good to all. The surrender he has made is not merely for the purpose of self-deprivation, and to entrust the protection of his person and property to the hands of others; but, rather, that he may submit his judgment in the direction of his own affairs to the superior wisdom of the many having like interests and responsibilities, who endeavor to make a harmonious whole out of many conflicting and unfriendly parts.

It is self evident that such a system cannot be successfully carried out, except by the aid of peremptory commands. There are always those whose selfishness or indifference leads them to wholly ignore or willfully trample on the rights of their fellows. Admonition and argument, prayers and pleadings, are alike unheeded. The majority, in their wants and sympathies, represent those more desirable things which the law seeks to make attainable. The peremptory phase of municipal government is adopted, for the control of the carelessness and innate depravity of the few. Most men prefer peace and good order at all times. They would of their own volition beautify the home and the street, and remove from the path the stone over which their brother might stumble and fall. Cleanliness is near enough to godliness with them to cause it to be looked upon as something more than mere personal comfort. These are, however, not the matters of greatest importance in the city.

In unlooked-for places, and in carefully-concealed forms, we find lurking the seeds and germs of disease. These are the matters with which we are at this time more especially concerned.

Individual interest is not a sufficient incentive to apply the proper remedy in a case where the evil effects are so insidiously hidden. Convenience and temporary advantage often induce the doing of things, and persuade to the allowance of conditions, which are known to be hurtful. In this field there is the largest scope for the exercise of municipal authority. As though to emphasize the fact that these matters are specially entrusted to the municipal authorities, the laws of the State concerning cities, in addition to the general provision which I have above quoted, also provide, that the council "may make regulations to secure the general health of the city and remove nuisances;" that "The council may make regulations to prevent the introduction of contagious diseases into the city, may make quarantine laws for that purpose, and enforce the same within five miles of the city."

So preëminently important are considerations affecting the public health, that the power of the city government is not confined to the city limits, but is permitted to reach out and control every act within a radius of five miles, in order to securely avoid contagion. When the occasion arises, the exercise of this power is without other limitation than the necessity which puts it in action. It is superior to all considerations of private interest or benefit. It may destroy property, control the care of the sick, regulate the burial of the dead, banish those afflicted with dangerous contagious diseases from the society of men, and with unrelenting hand sever the dearest ties of blood. The harshness and apparent unfeelingness of these acts, as applied in individual cases, are overshadowed by that higher consideration, the public good. Yet, how immeasurably hurtful the exercise of such powers may be, unless directed with the greatest wisdom and administered with most abundant precaution.

In the matter of health regulations, greater liberty is allowed than in any other direction, because of the necessity for speedy action to prevent disease, and the dangerous consequences which follow delay and neglect. The exigencies of each case are varying, and the occasions for the exercise of this authority are so many, that it is impossible to lay down any exact general rule defining the extent of the power. When the occasion arises, the power is not lacking to guard well every public interest, and the exercise of the power to the full needs of every case is an imperative duty. It is all the more so because the city alone, to the exclusion of all other instrumentalities, can issue such peremptory mandate.

Speaking of this phase of municipal government, an eminent judge said: "No power is more important than that for the preservation of public health. It is not only the right but the imperative duty of the city government to watch over the health of the citizens, and to remove every nuisance, so far as they may be able, which may endanger it; and they have necessarily the power of deciding in what manner this shall be done, and their decision is conclusive, unless they transcend the powers conferred by the city charter or violate the constitution." (*Baker v. Boston*, 12 Pick. 184.)

As we have seen, there is no restriction upon the municipal authority by express law. The city is invested with police powers to the broadest and fullest extent in all matters pertaining to public health. Its judgment is exclusive and conclusive. Of course, it cannot declare that to be a nuisance which, from the nature of things, is not; but, in the treatment of those subjects over which it is given jurisdiction, its authority is supreme, and its decrees are mandatory and peremptory.

Having such power, and being thus invested with means adequate to accomplish these felicitous purposes of government, the moral duty of every municipality is

as clear as its legal right is plain. The public good should be the inspiration of all municipal action, and the general welfare of the people should be the aim and purpose of every enactment.

Upon the conclusion of this address, the convention was adjourned till 9 o'clock A.M., December 4, 1891.

## SECOND SESSION.

DECEMBER 4.

This session of the convention was called to order at 10 o'clock A.M., Rev. F. D. Baker, of Salina, presiding.

Rev. Wm. Bishop, DD., of Salina, read an address upon

### MAN, PHYSICAL AND ETHICAL; OR, BODY AND MIND IN CHARACTER AND LIFE.

The theme that I am to present touches so many subtle and recondite principles in the human constitution, and so many perplexing problems of life and destiny, that it is difficult to handle it in the few words I am permitted to utter. A *look* is all that can be given in 20 minutes. Twenty hours would not be adequate for a thorough presentation of such a topic. Yet it is a question of transcendent interest. It lies at the foundation of sanitary science, and is related to almost every phase of character and life.

As Samuel Johnson, in walking along the historic fence, at regular intervals, touched a picket with his staff, so I will try, here and there, to touch a point—a principle, or a deduction, trusting that the treatment may be *suggestive*, if not exhaustive.

Modern investigations in physiology and psychology have shed considerable light on some difficulties involved in the interdependence of body and mind. While many visionary vagaries and erratic speculations intermingle with excellent philosophical results, yet no genuine thinker can afford to ignore conclusions reached by careful induction. He must analyze, discriminate, accept established truth, and reject unproved assumptions.

Physiological psychology, as it is called, is at present a subject of keen inquiry. The experiments of Lotze and Wundt, in Germany, Carpenter, Ferrier, and Holland, in England, and other physicians and metaphysicians, are full of interest and promise, but they by no means justify the lofty pretensions and premature generalizations of Mill, Tyndall, Huxley, Darwin, Spencer, and other coryphees of atheistic evolution, who would reduce mind, consciousness, thought and moral excellence to a mere branch of physics.

There is, of course, a relation between body and mind—the one acting and reacting upon the other. The evidence being overwhelming as to the existence of a connection between conscious life and the brain—the physical and the psychical—five hypotheses are possible as to its nature: (1) The mind is only a form or product of the body. This is *Materialism*. (2) The body is only a form or product of the mind. This is *Idealism*. (3) Mind and body, consciousness and brain, are evolved as different forms of expression of one and the same thing; that is to say, there is a unity at the basis, but a duality of manifestation. In essence, the soul and body are *one life*. This is virtually the doctrine of Schleiermacher and his disciples. This is peculiar to mysticism, and may be called *Monism*. (4) Another hypothesis is, that man consists of three distinct substances: body, soul, and spirit. This doctrine has been held in different forms by eminent philosophers and theologians, from Plato, whose creative genius originated it, to Joseph Cook, who has defended

it by brilliant and plausible argument. The simplest and most intelligible statement of the theory is, that the body, the *soma*, is the material part of our constitution; the soul, the *psuche*, is the principle of animal life; and the mind or spirit, the *pneuma*, the principle of our rational and immortal life. This view of the nature of man has some semblance of support from a superficial exegesis of some passages of scripture; but deeper views have ruled it out as not even a workable hypothesis. It may be designated *Trichotomism*. (5) The last and remaining theory to be mentioned is, that the body and the mind are two distinct essences or substances; and that while they act on each other when vitally united, yet that the mind or soul can exist independent of the physical structure.

This view of the human constitution, which may be termed *realistic dualism*, has been adopted by the best and safest thinkers of the age. It asserts the existence of two distinct *res*, entities, or substances—matter and mind, made known to us by different organs; the one by the senses, the other by self-consciousness. They are also made known as possessing different attributes, the one being characterized by extension and resistance; the other by thought and feeling. It is not necessary, even if there were time, to state the arguments for this doctrine of the dual nature of man, drawn from revelation, reason, philosophy, and science. Suffice it to say, with a distinguished physiologist, "that no purely physiological investigations can explain the phenomena of consciousness." They may aid us a little, however, especially the physician whose peculiar function lies in the department of the vital and the physical, and the minister whose sublime mission is in the realm of the psychical and ethical. A farthing candle is better than nothing, as we try to thread our way through the dark labyrinth which intervenes between the two territories of matter and mind, where we meet with some of the profoundest mysteries of our nature. Within this mysterious border-land, if we may use a concrete for an abstract conception, lie sleep, dreams, dotage, somnambulism, insanity, mesmerism, and, perhaps, clairvoyance—topics on which little or no light has been thrown. Mists and darkness forever brood over this dark gulf. But while this is so, there are certain facts, whether we can explain their rationale or not, that have been established, which may guide us in the practical and professional duties of life. And these facts are accumulating with the progress of research and experiment. Some of these facts may be revealed in this discussion.

The body, as a whole, may be regarded as the vestment of the soul—the scabbard in which the sword of intelligence is sheathed; the casket in which the eternal jewel is incased; the sanctuary in which the immortal spirit is enshrined. In other words, man is a created spirit in vital union with a material, organized body. This union is vital in such a sense as that the soul is the source of life to the body. When the soul leaves the body, the latter ceases to live. It loses its sensibility and activity, and becomes at once subject to the chemical laws which govern unorganized matter, and by their operation is soon reduced to dust, undistinguishable from the earth whence it was originally taken. But conditioned as we are in this time-world, however it may be in other conditions of existence, the mind can only put forth its conscious energies while ensphered in this material fabric. It is not meant by this, of course, that the bones or muscles of the body can produce thought or feeling. They serve their purpose in the animal economy, and are intended to be the servants of the personal reason.

Moreover, there are various other organs of the body, constituents of our vital mechanism, as the stomach, lungs and heart, liver and spleen, which, in the opinion held both among the ancients and the moderns, seem to have a connection with thought, temperament, mental functions, moral feelings, emotions, sympathies, and imagination. The contrast is remarkable, whatever the cause, between the buoyant

spirit of the hectic patient, suffering from an affection of the lungs, and the man laboring under disease of the liver. Who has not seen persons under the influence of hepatic derangement so oppressed with a heaviness of heart as to repel relief from any suggestion of reason or the consolations of religion? The classical scholar will recall the fate of the miserable Tityus, as told by both Homer and Virgil, who, for his nameless crime, was condemned to be eternally tormented by the preying of a vulture upon his liver which was supernaturally reproduced as fast as consumed.

"*Rostroque immanis vultur obunco, immortale jecur tundens.* A huge vulture, with his hooky beak, pouncing his immortal liver."

This, of course, is a fable, but it may be a physiological truth as well as a graphic allegory, descriptive of the intense wretchedness which so often proceeds from a diseased condition of this organ. Indeed, Hippocrates, Galen, Aretæus and other illustrious ancients were accustomed to describe a great variety of mental diseases under the general term "melancholy," because they believed a pensive and desponding state of the mind to arise from a superabundance of "black bile," the literal meaning of the compound word "melancholy." Others supposed the hidden cause of this mental depression to be the spleen, and hence, to be "spleeny," as a synonym of gloomy or disconsolate, has come down to us as a saying of antiquity. The use of this spongy viscus has never been certainly determined. Its influence in producing emotions of sadness seems to be conceded, and is conveyed in the word "hypochondria." Every reader who can analyze the term knows that it designates the position of this organ, *hupo chondron*, under the cartilage. And who does not remember the sour, surly, snarling Carlyle, who bore about him, continually (so he expresses it), "that diabolical arrangement called a stomach," and so he became the tormenter of his own life, and of his own wife, who heroically endured untold agonies that her name might be associated with his immortal genius.

It is not only a fact of observation, but also of consciousness, that certain states of the body produce certain corresponding states of the mind, and thus their tendencies and influences manifest themselves in character and life.

While the body, (especially, as we have seen, some of its vital parts,) affects the mental, emotional and moral operations of the mind, it is the *brain* that is the grand material organ of intelligence and feeling. The brain is not the mind itself; for its functions are merely *instrumental* and *subsidiary*. It is believed that, in lower organisms, the brain matter is in a diffused state. In higher animals it becomes centered in little brains, and these become more and more specialized as we ascend the scale, and they are differentiated to the greatest extent in man. But there is no absolute proof that in the end they accomplish a higher purpose in *kind* than they did at the beginning. They of course do so in degree and in intensity. It is the contention of some that the brain, or, comprehensively, the whole cerebro-spinal mass, has psychological qualities. And physiological experiments have been made, beginning with the spinal column and mounting up to the cerebral hemispheres. It is not necessary here, even if there were time, to describe the *spinal column*, with its motor and sensor nerves, nor the cerebral centers believed to be connected with the organs of sensation, nor even the *frontal lobes* of the brain, supposed by phrenologists to be the seat or center of higher intellectual operations. Suffice it to say, that there is no evidence of any kind of mental action in ganglia, nerves, centers, or lobes. It is true, some speak of unconscious mental action; but I doubt much whether there is such a thing as unconscious thinking or feeling. There is no proof that the convolutions of the brain are mind. There is, no doubt, intelligence implied in all this very delicate mechanism, but it is that of the Being who fashioned and arranged the whole.



According to the maxim of the Stoic philosophy—"Nihil est in intellectu quod non prius fuerit in sensu"—there may be, by the action of the sensory organism, sense perceptions and sense ideations, as they are sometimes called, though, with Aristotle, Bain, McCosh, and others, I would prefer the term *phantasms*. Yet, admitting all this to be true, we are not justified in the conclusion drawn by physicalists who are not metaphysicians, that in these cerebral actions "we have the basis of all intellectual and volitional acquisitions." For, as has been well said, "in all this we have only sensor and motor affections of the body, and sense perceptions and reproductions of sense perceptions in the mind, but as yet we have none of the higher manifestations of mind—no judgment, no reasoning, no idea of perfection, no determination to make sacrifices, to do good and resist evil." To produce these, we must call on higher attributes of mind, and no physiological observations have furnished any proofs whatever that these require special cerebral centers. The one is an *objective* process, the other *subjective*, and neither can be expressed in terms of the other.

Admitting, then, as we must, that body and mind are two different and distinct entities, we must admit, also, that they exert a reciprocal influence the one upon the other.

A healthful condition of the body would seem to be necessary to a healthful state of the mind. Abnormalities or disorders of the one must have a tendency to produce derangement in the operations of the other. Philosophy and experience would seem to formulate the law that a sound body is an essential condition of a sound mind. True, there are exceptions to this rule, but it is probable that if we knew enough these deviations would be seen to be only apparent and not real, and thus confirm the general law. The scientific study of the laws of heredity and environment may be expected to throw light on some of the dark phases of this question, and the phenomena of atavism have their bearing and uses in the solution of problems in this department of inquiry.

Logical necessity would seem to require that a good deal more should be said on some lines of thought suggested by the positions already enunciated; but the limits prescribed for this paper admonish me to dispatch the sequel in a few words. I will therefore simply state without enlargement, by way of deduction, some propositions carrying with them principles of wide application in dealing with the elements of character and in the practical affairs of life.

1. *Intellectual insanity*, in all its forms—lunacy, madness, derangement, alienation, aberration, mania, delirium, frenzy, monomania, dementia, and the whole catalogue of mental disorders—may be traced to a multiplicity of causes, the most of them having their seat or center in bodily conditions, and these conditions themselves the results of some of the following causes: Hereditary tendencies, unfavorable environments, consanguineous marriages, alcoholism, licentiousness, and, in one word, the violation of physiological and hygienic laws. Every insane asylum is a standing illustration of the above statements.

2. *Moral insanity*, in its technical form, as defined by medical jurisprudence and criminal law, implies such blindness and perversion of the reason that there is no perception of moral distinction—a lack of discrimination between right and wrong—and, consequently, there is no grip of obligation upon the conscience, and so the will power acts regardless of ethical principles. There are various criteria, not necessary to mention here, by which this mental condition is determined, and, when proved to exist, there can be no personal responsibility. But there is another conception different from this, which regards all wickedness—being contrary to reason—as the highest form of insanity, and, therefore, evil-doers are not exempt from accountability. "The heart of the sons of men is full of evil, and madness

is in their heart while they live." The former, the irresponsible form, usually originates from physical causes, while the latter may be traced, frequently at least, directly or indirectly to the influences of heredity and environment. The poison is in the blood and the moral atmosphere, and the contagion flows from generation to generation.

A remarkable case of this kind has lately been brought to light. Some time during the last century a couple, a man and woman, settled in an isolated part of the country not far from the shore of Lake Ontario. They were very prolific, as were also their descendants. Great fecundity is a characteristic of such people, and—

"Their ancient, but ignoble blood  
Has crept through scoundrels ever since the flood."

The statement is made, that from that one family there have been 400 convicted criminals who have suffered the penalty of the law. Wilkes Booth and Guiteau are types of this kind of moral insanity. Here is food for reflection.

3. *Pathematic insanity*, by which is meant all those mental disorders which chiefly reveal themselves in emotions, passions, affections, and desires—in one word, the *sensibilities*, according to the usual classification in psychology, though it seems to me that the designation of Sir James Makintosh, viz., "the pathematic department of our nature," is the most philosophical nomenclature. It ought to be stated that the imaginative plays an important part—indeed, the whole mind, being a unit, is involved in all these abnormal manifestations. Insanity, in different degrees, may take forms of melancholy and hypochondriasis, to which we have already adverted. Besides these, may be mentioned hysteria, peculiar to the female organization, *delirium tremens*, peculiar to the worshippers of Bacchus, spectral illusions and hallucinations *ad infinitum*. The intimate connection of this class of disorders with the bodily organs, especially the nervous system, is conceded by all who are experts in these lines of inquiry. In the treatment of such cases, the physician needs the "wisdom of the serpent and the harmlessness of the dove." Here is a wide field for his prophylactic, diagnostic, prognostic and therapeutic abilities and resources, which big words mean—he must have common sense in his application of knowledge.

4. *Religious insanity*, as it is called, though it is a misnomer, has been treated as a branch of deranged mental action. It demands special attention, careful analysis, elaborate exposition, in view of the statements, or rather misstatements, of a certain class of writers and some medical authorities, who, whatever their erudition on other subjects, seem to be densely and incorrigibly ignorant as to what constitutes true religion. It goes without saying that there are hundreds of circumstances and constitutional conditions which must inevitably modify mental action and spiritual life. But I must here and now—time not allowing any further elucidation—enter my protest against any such implication as would represent genuine religion as in any way conducive to insanity. Hoping that at some future convention this topic will be placed on the programme for ample discussion, I herewith submit two quotations, the first from an eminent divine and philosopher. He says: "This one thing I must testify: that I never knew the most pungent convictions of sin to terminate in insanity; and as to the affections of love to God and the lively hope of everlasting life producing insanity, it is too absurd for anyone to believe it." The second quotation, from a standard work on insanity, by a distinguished medical author, is as follows: "There is not a tittle of evidence to substantiate that Christianity, abstractedly, ever made a person insane. Such an accusation is only one of the abortions of infidelity, or of those who lack knowledge."

To these statements I add, so far is the Christian religion from ignoring any part of human nature, or introducing collision among its elements and forces, it recog-

nizes a solidarity of the human organism. It repudiates a one-sided culture as scarcely better than dismemberment, a fact which is coming to be accepted by all true thinkers who see "the Christ-word" in the "New Sociology." The Christian ideal is not satisfied with the old legend, "*mens sana in corpore sano*"—a sound mind in a sound body—this is good as far as it goes, but it would build a throne within both for the spirit of truth. The goal is ethical and spiritual health endowed with the power of an endless life."

*Discussion.*

Doctor Williams, of Olathe: "I believe it is stated in the paper that religion is never the cause of insanity. The line of demarcation between sanity and insanity is so closely and delicately drawn that it is extremely difficult to tell always just where a certain small percentage of the people stand; and I cannot see why, in the case of a person standing upon this line or verging toward it, subjected to an excitant like religious frenzy, insanity may not follow. The fire is smouldering and needs but this or some other exciting cause. The effect will be the same, practically, whether the emotion be of grief or joy, although it has been my opinion that grief, hatred and the like were most potential. Religion may be no stronger than other causes, but it is undoubtedly, in my judgment, a cause, under such circumstances as I have described.

"I recall the case of a young lady of exceptionally pure and simple life who became violently insane at a Methodist revival, she having before that time evinced no disposition to insanity. She was confined in an asylum for two years and then discharged cured, but she was ever subject to violent outbreaks of a religious character."

Doctor Boutin, of Abilene, said: "We cannot eliminate the effect of religion upon the mind any more than any other excitant, but in my judgment those emotions which have a depressing effect upon the mind, such as grief, anguish, etc., are more likely to produce insanity than the emotions of joy, happiness, and the like, and I prefer to regard religion as an excitant of the latter class."

I. Shook, of Abilene, suggested "that a man thinking on one subject intently and continuously will restrain the mind from its regular and ordinary functions, and will gradually carry the mind away from its normal condition until insanity is produced." He gave in exemplification a case of suicide in which the premeditation was long and increasing, and ultimately led to the death of the man. The speaker closed his remarks by saying, "Religion never made a man insane unless his mind was weak or otherwise depressed."

Hon. Martin Mohler stated that it was ascertained from statistics that the majority of the inmates of the insane asylums of Kansas are women; also the majority are from the country. He asked why the majority should be women, and why the majority are from the country rather than from cities?

J. H. Lockwood, D. D., of Salina, suggested that the majority of the people of Kansas reside in the rural districts.

Doctor O'Brien suggested that the Kansas winds may sustain a causative relation to the insanity of women. The climate had been called a destroyer of women. Allied to the wind was the continual grind of the small duties and burdens which Kansas women living in the rural districts have so heroically borne and suffered, throughout many years, amidst the hardships and exposures incident to pioneer life. The sphere of action of woman so situated was circumscribed by narrow lines; there was little or no diversion, and the wear and tear was forever present. With all the rest, child-bearing, under such circumstances, was doubtless a factor.

Doctor Pelton: "The paper presents a subject of deep interest to me. It is doubtless based upon the theology and psychology of the present day, but there is certainly a divergence of the theoretical lines advanced by theology and medicine.

"As a theory which would harmonize this difference, I suggest a three-fold division—body, mind, and soul or spirit. Mind being simply the evolution of life from the action of a spiritual entity upon matter.

"From this reasoning, a diseased body may produce a diseased mind, but the soul or spirit would continue unimpaired.

"Many of the functions of the brain have been localized with considerable exactness. A part doubtless governs the body and a part relates to the intellect."

Doctor Bishop: "I do not deny the fact that there are many cases which look very much like insanity produced by religion. But generally, in almost every case, the cause may be traced to some other event in the life of the person. Probably the most notable example is the poet Cowper. He had but very little religion at the time of his insanity, and after he had recovered his reason he became a very religious man.

"Common sense is as necessary in the proclamation of religious truths and religious teaching as in the practice of the medical profession. Religious teachers do not always teach true religion, or teach it in the proper way; but excitement and fanaticism are not religion. Religion is disposed to restore man to his normal condition, in the quiet and peaceable possession of love to God and love to man. Religion favors a healthy body, and supports all the means of maintaining it.

"On another point, I maintain that the brain is the instrument of the mind; but there are two distinct entities, soul and body, as shown in death. The body dies but the soul survives. In conclusion, I observe that there is a tendency in the medical profession—their study being almost exclusively of the body—to become materialistic, going even to the extreme of endorsing phrenology, which is absurd, as it can give us no idea of thought or feeling, for these can only be known by consciousness."

The next in order was a paper by Prof. C. Y. Roop, of Salina, superintendent of the city schools, upon "School-Room Sanitation." Professor Roop being indisposed and unable to appear, this number of the programme was reluctantly passed over.

Dr. W. B. Dewees, A. M., of Salina, then delivered an address upon

SANITATION *versus* DO-NOTHINGISM.

When we seriously attempt the study of ourselves and our surroundings, to reveal and to prevent the causes that destroy our well-being, we are amazed at the magnitude of the task and the vastness of the field of observation. But persistence, with intelligent, systematic thought and intensity of purpose, will gradually bring order out of chaos, and we realize that we have reached the plane whereon rest the sources of that knowledge whose hidden springs so often elude our mental grasp.

The whirligig of time brings its changes in human welfare as in other departments of knowledge. Silent and slow, but sure and steady, is the evolution of sanitation, from the mystical and coarsely empirical to logical and rational methods. The use and abuse of the creative animating breath of God, by man's obedience or disobedience of the laws of nature—by his intelligent, active and clean life, or by his ignorant, idle and filthy existence—is an illustration of the iconoclasm which, in this enlightened and progressive era, beats relentlessly upon hoary tradition or more recent opinions founded upon truly scientific evidence. And thus there is suggested for brief consideration the subject of "*Sanitation versus Do-nothingism*"—a subject the selection of which by a practitioner of medicine, it is hoped, none will think inappropriate.

Sanitation—which is simply intelligence, labor, and cleanliness—is the chief producer of man's health, happiness, and peace.

Do-nothingism—which is simply ignorance, idleness, and filthiness—is the chief source of the diseases and miseries of mankind.

Sanitation, like the gospel, seeks to fit men for heaven by first fitting them for earth; to have the Father's kingdom come, His will be done in earth as it is done in heaven.

Do-nothingism, like sin itself, seeks to lead men to destruction by first having them disobey the law of nature, by allowing pestilence and disease to bring suffering and premature death in the land.

As there is no such hate as religious hate, and no such love as Christian love, so there is no such sanity as a sound mind in a diseased body, and no such health as unclean health, or health begotten of idle hands and brains—do-nothingism. Sanitation is paramount to the escape of diseases of every name or order. Without it the most healthful region of Kansas, or even of the world, must, if inhabited, become impregnated with filth, pestilence, disease, and premature death.

Sanitary science is the greatest, deepest, most abstruse, complicated and difficult upon the face of the earth. The sanitary profession is the most sacred of all professions, second not even to that of the clergy or the law. I think the learned representatives of the two last-named professions within my hearing will be ready to take exception to this broad statement. But let us see. The profession of the clergy read the truth in the divine revelation transmitted through the fathers. The legal profession read it in the civil code transmitted through tradition and history. The sanitary profession read it in the unerring law of vital forces transmitted from the beginning of creation. The two former teach a mediatorial redemption from the transgressions of the moral law; the latter acknowledges that it knows no other escape from the penalties attached to the infractions of the inflexible law of nature.

The priest is a privilege, the lawyer is a luxury, but the sanitarian is a necessity. Religion is a rule of faith, law is a rule of action, but sanitation is a rule of the absolute needs of the race, for it affects the whole people. It concerns the health, the wealth, the happiness, the reasoning powers, the will, the motives from which actions spring, the conduct, the lives of all.

May we not, then, endeavor to prove ourselves generous to a fault by accepting that these professions should be broadened in the catholicity of science, which is after all the demonstration of God's own law of pure and simple truth? Since hygiene, in common with the other sciences, emanates from the same source and center of being, should it not be at least equally respected, investigated, and obeyed? Are not they who study the infinite minute, and yet see through it all the marvelous working of a vital law, intended primarily for the beneficent good of the created, moved by the same divine inspiration as those who measure the infinities of space and weigh the distant stars in the balance of mathematical correctness; or even as the priests, no matter how white-robed they may be or how holy the altar at which they practice?

Man is a complex medium, through which divers forces of nature—ordained currents of the divine will—may and do act in manifesting themselves with his surroundings. Man's life is the adaptation to, while his health is the correspondence with, his environments. Sanitation is simply obtaining and sustaining pure and clean environments. With these conceptions of man, and his intelligent understanding of his everlasting environments, no wonder that we have such colossal views of sanitation.

Hygiea was heaven born. In her right hand is length of days; in her left, health, wealth, honor, and glory. Like the history of mankind, with its dark ages, so do we find that the goddess of health was forced, through man's disobedience, to abdicate her throne of perpetual youth and see it desecrated by passion, pestilence, disease, and premature death. It is fully patent to all thoughtful, intelligent and observing minds, that in the rapidly-shifting scenes by which we are surrounded, and in the onward march of science that characterizes the age in which we live, there has resulted a civilization in disobedience to the laws of nature, whereby the environments of the people of this commonwealth are daily becoming more and more contaminated with filth and the seeds of disease, which demands urgent attention to the holy institution of sanitation.

It is perhaps not essential that now or here it should be attempted to explain why this unfortunate state exists, but more profitable to recognize the fact of its existence, and the general demand of the public weal for some remedy. To be born right, and to live right, are the essential requisites in attempting to banish unnecessary suffering, preventable disease and premature death from the land.

Conscious of the fact that we have no right to recognize an evil unless endeavoring to provide means for its eradication, and that no institution can survive unless founded upon the actual needs of the race, we find commensurate therewith *sanitation* with its *fundamental principle of attention to environment*. It is not the ship being in the water which will sink it, but the water getting into the ship. So, in like manner, man's health is not ruined by living in the world—which he must do while the immortal soul remains in the body—but by the world living in him. For as certain as it is that the stability of every government depends upon the moral convictions of its people, so sure is it that the health of all people depends upon the hygienic condition of their environments.

Hence, suffice it to say, that man was made to prosper and be happy; to have good health and attain full physical development; to be free from disease and live his allotted three score and ten years, and if he does not it is somebody's fault. That somebody is man himself.

God demands that every one work for the good of all. The rich man's lazy son and daughter belong together with the tramp and the lounge, for they are alike idlers or do-nothings, with no recognized place in civilized society nor in the divine kingdom, since the gospel teaches that "if any man will not work, neither shall he

eat;" yet eat he must if he would have good health. Hence health requires labor. It is worthy of note in this connection that, while a reasonable amount of labor is conducive to health, overmuch and idleness alike make man a brute, as well as ruining his health and peace. In other words, he who is too busy to find time for cleanliness, knowledge and rest is busier than God wants him to be, and the fruit of such labor is a poison unto death. Likewise is he who allows himself to exist with idle hands and brains "a pest and public enemy." Such do-nothingism demonstrates "man's inhumanity to man," and warrants the expression that the disease, like the devil, never needs men any meaner than they who are tyrants to their neighbors. They live, it is true, but their life is the low life of parasites and not of independent existence. Is it not our duty to say to them individually and prayerfully, "Oh, man! turn from thy ways and filth, give ear to divine counsel, and thou shalt have life?" Our fathers had a full conception of this principle when they declared, "We hold these truths to be self-evident, that all men are endowed by their Creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness"—life first, for without it we have no rights, we possess no environments.

The advance made in science and art and human welfare within the last decade or two is simply wonderful. As is meet, *medicine*—which embodies hygiene, and which has been called "the link that unites science and philanthropy"—seeks ever to be in the forefront with sanitation in the progress of civilization.

The medical profession of Kansas has frequently sounded the tocsin, by having spoken often and boldly, to bring public hygiene to bear upon human misery. But the do-nothingism of the legislators of her people must be, at least partly, ascribed to the still-existing ignorance of that representative body. The Legislature of Kansas has ever seemed totally oblivious of the facts perfectly patent to all the intelligent, observing and progressing people whom it represents, that in creating a State Board of Health without giving it the necessary authority, power and funds to establish and maintain an effective system of modern sanitation, it has given birth to a child which, though still living and having grown in years, has failed to develop in influence, usefulness, and power, for want of proper clothing and support.

Digging post-holes and fixing posts in them will define boundaries, but does not make a fruitful orchard.

The people of Kansas are wont to boast of their pride in that their representatives are men of culture and training; but all the more difficult is it on this account to explain and condone their fanatical zeal about non-essential things. They strain at a gnat if they do not swallow a camel. Let any intelligent, sober and observant voter within this commonwealth acquaint himself with the actions of our representatives, when in and out of session, let his patient study ascertain and his courage speak it out, and the report, with but few exceptions, will be that our legislators have been found "tithing mint and anise and cummin, and neglecting the weightier matters of the law"—the health of the people. Unless we can very materially change the conditions which surround us, and which the State refuses to control, it remains our simple duty to adopt whatever measures promise a fair degree of success in preventing the accumulation of filth and spread of disease. But if the voting public, the source from which sanitary legislation must be secured, can be made to understand clearly that sanitarians are not actuated by purely personal motives, but that their aim is that of missionaries, seeking to accomplish the greatest good for mankind, their sympathy will be enlisted, and their feeling of self-interest will be an impelling motive to procure such legislative enactments as are essential requisites for the welfare of the citizen, for the protection of the health of the public, and for

the just appreciation of the usefulness, the dignity and the self-respect of the sanitary profession.

One and all have a right to expect much of sanitation. It professes much. Especially is demanded consistency, judgment and rational zeal of its chief advocates, the sanitarians. They are educated men, and intelligent people will not say that they are not sincere and earnest men. Indeed, thoughtful people think they are all this; that they are men who consider the question of hygiene, and learn to know the absolute needs of obtaining and sustaining health. Consequently, it becomes the right of the people to demand that the sanitarians fully instruct them in the principles of sanitation; while, on the other hand, it becomes their duty to listen to the voice of the sanitarians, that they may learn to know how to practice the unerring rules of life. Thus the people and the legislators must needs be taught to know that rights and duties balance each other; that they have no right to demand cleanliness from their neighbors unless they are fully willing and do discharge their duties in like manner towards them. Hence their duty, their responsibility and their opportunity must seem plain and obvious.

They must be taught to know that they must give effect to the principle that they are their brother's keeper in whatever pertains to the prevention of the introduction and spread of all contagion, lest, when they shall be called upon to render the final account of their stewardship, the Master will call out to them, like unto evil Cain, "Thy brother's blood crieth to me from the ground."

They must be taught to know that what the Creator has ordained for life, health, wealth and perfect physical development, if rightly directed by man, and that the same, if wrongly directed, will invariably produce misery and many of the diseases common to man of every clime; that we are here to direct forces; that the problem of this age is not how to produce and concentrate health, wealth, happiness, peace and perfect physical development, but how to distribute it—how to apportion fairly the bounties of nature, and at the same time avoid the despotism of too much government.

To be more practical and definite, they must be taught to know that sunlight, pure air and thorough cleanliness are natural enemies to the germs of disease, which can only live where there is dampness, darkness, mould, and dirt; that there is sound philosophy in the old saying, "There is more health in a sunbeam than in drugs, more life in pure air than in a physician's skill, and that sunlight may fade your carpets, but better that than have its absence fade your cheeks;" that if the inhabitants are permitted to die of preventable diseases, there is great waste, not only in life, health, and happiness, but also in money to the community; that the public weal demands immunity from consumption, cholera, and dysentery, yellow fever, small-pox, and scarlet fever, diphtheria, whooping-cough, and croup, typhoid fever and other diseases incident to civilization, in disobedience to and preventable by civilization in obedience with sanitation. Also, immunity from filth accumulations, water contamination, deteriorated food and drugs, defective architecture, systems of heating, ventilation, and sewerage; the hydra-headed sequents of alcoholic beverages, nostrum venders, uneducated and charlatan physicians, with various other causes that civilization can and should control, as these are the active sources of disease and premature death.

To illustrate a point or two, let us take the city of Salina, with an estimated population of about 7,000, and an average number of deaths annually of about 100, or a death rate of 15 per 1,000 inhabitants, which it may be presumed is about the same as it has been in other parts of Kansas where it was not specially influenced. Of this number, the cemetery records show that about 10 per cent. died from consumption,



8 per cent. from dysentery, 5 per cent. from diphtheria, 2 per cent. from scarlet fever, and 2 per cent. from whooping-cough. These are all communicable (or contagious) diseases, and they are preventable through measures which are now known to sanitarians. Reliable statistics, collected by the Michigan State Board of Health, have proved that (even after the disease is introduced) about 75 or 80 per cent. of the deaths from diphtheria and scarlet fever are prevented if complete isolation of all infected persons is enforced, and there is then thorough disinfection of all infected substances, to say nothing of other contagious diseases.

It is of special interest to note, before this august body of thoughtful citizens anxious to labor for the welfare of all, that it is possible, then, through and in connection with the services of an efficient Health Officer, who is clothed with proper power and authority, to save, in a city the size of Salina, in each year, the lives of about four persons from death by diphtheria, about two persons from death by scarlet fever, and, I think it is safe to presume, about six persons from death by dysentery. Surely the saving of these lives, together with those from other preventable diseases, (which I have omitted because not needed in my argument,) and the sickness of the still larger number of persons, is well worth the noble effort of the city, in compliance with State and national sanitary laws.

To consider the economic side, we find that statisticians have computed the average value of an adult person for what that person will earn in excess of cost of maintenance, as about \$1,000. If now we take the six persons in Salina in each average year whose lives should have been saved from diphtheria and scarlet fever, and also the six lives from dysentery, there should have been a saving of \$12,000 to the economic value of this community from these three diseases alone. Who can estimate the total saving which should have been done from all the preventable diseases, including both sickness and death? That "no nation is truly great if unmindful of the sanitary condition of its citizens," as Doctor Gross puts it, is evident to all, but how best to care for its citizens is not so definitely settled in the minds of the people.

Let the conclusion be in the words of Sir Spencer Wells: "Instruct your mayor and corporation, your clergy and your household, that every case of typhoid fever or scarlatina, of diphtheria or small-pox, of measles or whooping-cough, can no longer be looked upon as natural and providential; but that the existence of such preventable diseases is a proof of ignorance and negligence, and a disgrace to the country, the town, and the family." Thus let us, as sanitarians, with sober, wise, honest and sympathetic words, point out to the people the best way to obtain to those results which our tradition, history and experience foreshadow, and our genius and aspirations cause us to yearn for, and we may confidently hope to receive the plaudits of a grateful people and the vindication and praise of posterity. But we must not endeavor to make haste too rapidly, since time, that wonderful crucible of all things, will have to do the testing, even in this beneficent work. For, as Moses found it impossible to instill courage into the timid breasts of the Israelites who were born and bred in the slavery of Egypt, and caused them to linger in the wilderness until the whole of the cowardly generation was eliminated by death, and its place taken by men trained in military service under his own eyes, so we must not expect to reform the entire habit of the mature men of our days, but must place our chief reliance upon the younger generation, who have not yet lost their mental plasticity, and who are hospitable to the newer and more progressive ideas commensurate with the laws of nature.

If our lives and our attainments will have fallen far short of our hopes and purposes; if we have not fully succeeded in the accomplishment of promised ends; if adverse winds and waves have driven us far away from the port for which we em-

barked, and thus the gardens of the Hesperides, the isles of the blest, we may not have seen, nor found peace in "ever climbing up the climbing wave," let us, after all, find peaceful consolation in the words of the Master: "Ye have served your brethren, ye have served the Lord." Let us ever remember that he who battles for sanitation battles for the right, and consequently is assured of victory, if not for himself, at least for those who follow his footsteps.

"No life  
Can be pure in its purpose and strong in its strife,  
And all life not purer and stronger thereby."

The discussion upon the subject of this address was opened by George White, of Salina. The speaker took a position upon the practical side of the question, and gave it local application. He observed that in this, and like conventions, much theory was propounded, but it never reached practical realization. Especially did he think this was true in the city of Salina. He commented upon the existence of filth and garbage in the alleys of the city, and regretted that even the present police regulations were not fully enforced.

In conclusion, he said that, with this knowledge of the existing condition of affairs and a better understanding of sanitation, there is no excuse for "do-nothingism."

Dr. F. B. Brown, of Salina, presented the next paper:

#### THE WATER SUPPLY AND SEWERAGE OF SALINA.

I have been invited to prepare a brief description of the water supply and sewerage of Salina, and to read the same at this meeting. It might seem, at first thought, that there could be no need of a descriptive paper concerning anything which is so universally spread over the globe, and through its rocks and soils, as the fluid common to all animal and vegetable life.

But a moment's thought reminds us that the supply of pure water to a city has ever been one of the most troublesome and scientific problems that men have had to solve.

The descriptions of the aqueducts of the Egyptians, the Romans, the Carthaginians, the Aztecs, and other ancient peoples, almost stagger belief at the present day, until it seems as if their great cities had been founded just where the most stupendous difficulties were to be encountered and surmounted in the procurement of water. Human knowledge has extended in every direction, except ability to read the future; and so our cities, starting as hamlets, possess only the resources of a spring or well for domestic purposes, until unexpected growth compels science to step in and supply the increased demand. Thus, in Salina, we use water from three different sources, viz.: Public works, wells, and cisterns. The public supply comes from a well 38 feet deep and 30 feet in diameter, in which are sunk four strained wells, six inches in diameter, to a depth of 86 feet, affording an abundant supply of the purest water obtainable for the city of the plains. Temperature of water, 60° F. The Holly direct-pressure system is employed. Neither standpipe nor reservoir is used. The ordinary pressure is 30 pounds. The capacity of the wells and pumping engines is 2,000,000 gallons daily. The distribution consists of eight miles of cast-iron pipe, from 4 to 12 inches in diameter. Service-pipes for domestic purposes are of lead and galvanized iron. There are 401 taps, and the daily consumption of water is above 400,000 gallons. We have 66 hydrants, and a fire pressure of 80 pounds, making our public supply all that could be desired for fire protection.

Nearly all householders have wells, which are about 30 feet deep, where the first water is found.

This stratum of water receives, by percolation, the surface water, making it undesirable for domestic purposes. Probably one-half of our families have cisterns. This is the best for washing purposes; but, on general principles, the ordinary well and cistern water must contain more organic matter than our public-supply water, though an analysis has never been made of any of these waters.

The construction of water-works, insuring a liberal and regular supply of water, admitting of its use for the luxuries as well as the necessities of domestic life, involves the establishment of a sewerage system necessary to carry off the water after it has been used.

Thus we have begun a very complete system of sewerage, known as the "Waring System of Sanitary Sewers." The plan is to drain as far south as Crawford avenue, west to the Missouri Pacific Railroad, and north to the Union Pacific Railroad.

The main or intercepting sewer is 1,800 feet long, two by three feet, egg shaped, and made of brick. It has an average depth of 19 feet below the surface, and a fall of one foot in 400 feet. It empties into the Smoky Hill river, at the foot of Ash street. At this time we have two lateral sewers (eight-inch sewer pipe), each about 1,700 feet long, having the same fall as the main sewer, extending through the principal business portion of the city. Catch-basins are placed at the corners, and man-holes every 300 feet, and a lamp-hole between, thus admitting of a thorough cleaning when necessary. At the end of each lateral sewer is placed an automatic flush-tank, holding about 10 barrels, which flushes every two hours. The intention is to have storm-water sewers running east to the river.

But the disposal of the greater portion of the soiled water, even where easy connection with the sewer can be had, is by means of the most primitive methods—thrown on the ground or deposited in cess-pools—both depending upon percolation for its removal. The open privy or cess-pool is frequently only a hole in the ground, the sides and bottom being the natural earth, and the contents, of course, rapidly permeating the surrounding soil, spreading the pollution in each case year by year, over large circles, until finally the soil becomes fully saturated with the sewerage, which then oozes through and appears on the surface of the ground, and by evaporation poisons the air we breathe, and must depress the vitality of the people and predispose them to the attacks of fatal epidemics. With the soil thus saturated with the impurities incident to human life, the rainfall enters at the surface and passes downward, carrying the sewerage with it, and, sooner or later, reaches the water of the wells from which the people receive their daily drink. Any condition of affairs that is sufficiently favorable to produce foul water and foul air will tend to develop that class of preventable diseases known as filth diseases, the most familiar in this country being diphtheria, scarlet and typhoid fevers.

Having thus cursorily outlined the city's water supply and sewerage, I feel that I ought to make a few comments and offer a few suggestions.

1. With regard to our water supply: I consider our public-supply water the best for drinking purposes, and would recommend its more extensive use.

2. As to the sewers: The plan has been passed upon by competent engineers, and pronounced effectual, and so far as carried out is all right. But, at present, there are only 38 connected with the over 5,000 feet of sewer now laid. The original city ordinance has been so cut down and amended, that it is now left to the discretion of the sanitary committee of the city council whether anyone shall connect, or not.

Its efficiency is shown by the fact that, at the present time, along the alleys between Fifth and Seventh streets, and Santa Fé avenue from Ash to Walnut streets,

are located privies and cess-pools with the ground thoroughly saturated with the sewage of former years. At a public bathing house the water, filled with diseased epidermal scales, is allowed to flow on top of the ground. These places, reeking with filth, and the air foul with disease germs, are allowed to continue, and the sanitary committee says: "Wait till sickness comes; then will be time enough to act." The grass-covered mounds on yonder hillside will surely and inevitably answer that sickness has come.

Remedy: The mayor should appoint a Board of Health of three local physicians, not members of the council. This Board of Health should appoint a secretary, who should have police power, keep records, make reports, and see to it that the ordinances are strictly adhered to. In this manner, and this alone, will the best interests of sanitation be subserved, and Salina begin to be sanctified.

George White, of Salina, called attention to the fact that buildings are frequently placed upon grading composed largely of manure, etc. He also suggested cremation as the proper way to dispose of rubbish. He objected to the ordinary sewage system as simply removing filth from one place to another without its destruction or permanent removal.

The convention thereupon adjourned till 1:30 p. m.

The convention reassembled at 2 o'clock p. m., Dr. J. Milton Welch, of Wichita, member of the State Board of Health, presiding.

Mrs. F. D. Baker, of Salina, read the following address:

#### SANITARY PRINCIPLES IN FAMILY LIFE.

The hearth-stone is a schooling of infinite importance. We never forget the simple lessons of home enameled upon the heart of childhood; they defy the rust of time, and outlive the more mature pictures of after years. How important, then, that, among other lessons taught in the family circle, the rules of health should be so engraved upon the mind of the child that it will not forget them. We believe what is so natural in one home is not impossible in another. Health is a great blessing. If we surround the sick man with great wealth, he cares little for his gold and silver; would deem himself happy could he enjoy the health of his poorer neighbor.

The birds and the animals have resting places, but man alone has a home. How important that this place, and the community in which he lives, be free from that which would bring disease and death.

The first method of raising a man above the life of an animal is to provide him with a healthy home. The family circle may be—ought to be—the most charming and delightful place on earth; the center of the purest affections and most desirable associations; of the most attractive and exalted beauties to be found this side of paradise.

The home should not be considered merely an eating and sleeping place, but as a place where order and cleanliness may be preserved, comfort secured, and domestic pleasures enjoyed. Three-fourths of the petty vices which degrade society, and swell into crimes which disgrace it, would shrink before the influence of a well-ordered home.

To be a place of happiness, exercising beneficial influences upon its members and especially upon the children growing up within it, the home must be pervaded

by the spirit of comfort, cleanliness, affection, and intelligence; and in order to secure this, the presence of a well-ordered woman is necessary.

Improvements in towns or cities, in the direction of proper sanitation, will effect comparatively little, unless we can carry the work farther, viz., into the homes of the people. There needs to be the coöperation of the dwellers in the homes themselves. They, too, must join the sanitary movement; otherwise little can be effected. There must be a cleanly woman to superintend the affairs of the family. The sanitary commissioners cannot convert the careless woman into a tidy housewife; there must be individual effort on the part of the home-maker. "Homes are the manufactories of men," and as the homes are so will the men be.

A proper knowledge and observance of sanitary principles would greatly lessen the number and gravity of diseases. The family should be thoroughly acquainted with all sanitary laws. But, as each home is affected more or less by those in the same community, a great responsibility rests upon the authorities. It is a lamentable fact that, in densely-populated cities, nearly one-half the children die before they are five years old. Every physiologist knows that at least nine-tenths of these lives could be spared by an observance of the laws of health. A writer well said that "there will be householders who, from ignorance or poverty, do not secure for themselves or for others needed sanitary conditions."

When disease, due to preventable causes, invades our homes, or we read of outbreaks of scarlet fever, diphtheria, etc., we are apt to think, in spite of all our knowledge and all our labors, that little has been accomplished. But to realize the grand advance which has been made in sanitation, we have only to picture the conditions of life as they existed in the days of our forefathers, some 200 or 300 years ago. A historian of the epidemics of the middle ages speaks of that period as a century of malignant affections, in which typhus diseases were continually prevailing; a century of terrible plagues, carrying off thousands and thousands of the populace.

The causes which produced these frequent outbreaks were the dreadful unsanitary condition of the homes, and the decay of the practical sciences.

Our ancestors, at a very early period, reached a point of sanitary refinement which seems to have been quite lost in subsequent generations. Thus, many a fourteenth-century house was supplied with a bath-room, good water supply, and public drainage, while the houses of the sixteenth century had relapsed into a dreadful unsanitary condition, illy adapted, and filthy in the extreme. Food was scarce, and of the poorest quality; water supply had to be taken from the surface wells, and no system of drainage existed.

With this condition of affairs, is it any wonder the people were carried off by the thousands? Turning from that period to our own time, we cannot fail to see the great improvement and marked contrast. In the present century, in England, the average life is 50 years; in the sixteenth century it reached only 30 years. Thus does history confirm the great importance of the earnest efforts which are put forth to reach a higher standard of medical science.

There is no reason why life should be short. Why should not all human organisms be preserved like a tree, or an animal of the forest, until its allotted period of life is reached?

Great efforts are being made by the medical profession to procure proper sanitary measures, and they are meeting with success; the death rate is decreasing every year. They need our coöperation; the essentials to make a healthy family and nation need our special attention.

We will note, first, pure air. Whenever any number of persons live together the atmosphere becomes poisoned, unless means be provided for its constant renewal. We find that, from the cradle to the grave, the great army of people who live in-

doors are breathing impure air. Just so long as cause is followed by effect, and just so long as the great masses of our people are exposed to one continuous bath of impure air, aggravated by great extremes of temperature, just so long may we expect premature disease and death. A practically uniform temperature should be maintained, fresh air constantly admitted, and the prompt removal of all foul air from the house as fast as produced should be provided for.

That the purity of the air and the regularity of the temperature play an important part in the prevention of disease, is nowhere disputed. That it is better to prevent disease than to cure it, is a self-evident fact. An ordinary family would breathe all the air in the room in less than 20 minutes. The sleeping rooms of a large proportion of our people are illy ventilated, whereas they should be the best and most commodious of all the rooms. Frequently the air space of the bed-room is totally insufficient for even one person, while two usually occupy it, and not unfrequently three or four. Is it any wonder they rise in the morning with sick headache, and have frequent attacks of disease?

None of the wants of the human body are so constant and pressing as that of air. Other demands may be met by occasional supply, but the air must be furnished every moment, or we sicken and die. Summer or winter, it is well to have a free ingress for pure air.

Poorly-prepared meals are a source of discomfort in many families. Health, morals and family enjoyment are all connected with the question of well-prepared food. Much might be said in favor of improved cooking; it is a neglected branch of female education. The art of common cooking should be studied, and the knowledge diffused among the people. Women of the poorer classes require much help from those who are better educated, or have been placed in better circumstances.

Sunlight is one of the most powerful forces in nature, bringing the vegetable world into being, and making animal life possible. It is frequently shut out from our homes. The same cause which makes the flower white and sickly when grown in dark rooms operates to produce the pale, sickly child that is reared in our parlors. It is only when exposed to the rays of the sun that children begin to show color, health, and strength.

A custom prevails among some people, despite all sanitary teachings, that the occupant of the sick-room should be kept at all hours in a dark light. A physician states that not one time in ten does he enter a sick-room in the day-time to find it blessed with sunlight. Invariably, before he can look at the face of the patient, blinds must be drawn, and the rays of a much greater healer be admitted. Often this reveals the condition of the room, which is one of disorder everywhere. Food, medicines, furniture and bedding all misplaced; dust and dirt prevailing. Sunshine diffused through a room warms and clarifies the air; it has a direct influence on the organic poisons, and a cheering effect upon the mind. Sunshine should penetrate all sleeping rooms and living apartments.

The water we drink has been correctly described as a life-giving and life-destroying element. Pure water, like pure air, is essential to good health. Wells should be widely separated from barn-yards, cess-pools, pens, and similar places. They are frequently constructed so as not to be free from surface pollution. A densely-crowded population soon impregnates the surface soil with filth, which drains into the water-courses beneath. Cisterns should be carefully built; roofs and gutters supplying the cistern frequently inspected to guard against the entrance of impure water.

Pure water is an element that is indispensable in the health of a family. I have known a family of 10 to be stricken with typhoid fever, three of whom died, the others for weeks lingering between life and death, all as the result of drinking impure water; the well was situated so as to receive the impurities of the barn-yard. It is

fair to presume that, if timely attention had been given to this important fact, this calamity would have been averted.

Water imbibes the impurities of the air. Many think if the water be clear and cold it must be perfectly pure, though it has stood in a close bed-room 24 hours, absorbing nearly all the respired and perspired gases in the room; the air of the room has become purer, but the water utterly unfit for use.

Music is another essential principle in the family life which promotes health; it is worry that kills; music comes with its cheerful strains, and banishes discouragement, despondency, and sorrow, and we again take up the duties of life with renewed strength and courage.

Sleep is a necessity; it is nature's sweet restorer; the cry for rest has always been louder than the cry for food, and the best rest comes from sound sleep. Sleep will do much to cure irritability of temper; will build up and make strong a weary body; will help cure a broken spirit; will help cure sorrow, and will cure the headache. If we go to sleep in a happy frame of mind, it will help much towards a refreshing slumber; a child should be put to bed with a cheerful good-night.

If we want sleep to be healthful, it is not well to place a very young person in the same bed with a very old one, as the younger, in such a case, will suffer by loss of vitality and heat.

Cold bed-rooms always imperil health. There is at least no gain in dressing and undressing in a temperature near the freezing point.

A cleanly home is something to be desired, as well as being conducive to health. Beds should be frequently aired, carpets lifted and thoroughly cleaned, walls dusted, and cellars frequently examined and purified. The yard and all outbuildings should be carefully looked after, so that filth shall not accumulate.

A good bath-room to every home is almost indispensable. A gentleman, in my hearing, said: "When I build my house, I will build a bath-room and the rest around it." In his mind it was the most important room of all. We are not all blessed with this convenience, and must only provide the best substitute possible. A clean body, a clean home, pure air, pure water, well-cooked food, the needed rest and sleep, music, and plenty of exercise, both for mind and body, will make our homes the abode of comfort, virtue, and happiness; the scene of every ennobling relation in family life; a training ground for young immortals.

So much depends upon the wife, that we might almost pronounce the happiness or unhappiness of a home to be woman's work. No nation can advance except through the improvement of the nation's homes. A home of purity furnishes an atmosphere of self-respect, and influences the moral condition of the entire family. It is the best exponent of the spirit of thrift; it indicates comfort and well-being; it is among the distinctive attributes of civilization, and marks the progress of nations.

Mrs. T. L. Bond, in discussing the foregoing paper, expressed her approval of the author's views, in the main. She regarded, as of first importance in the home, the cleanliness or purity of thought. No one has such conception of the impurity of thought in the family as the mother, and it is her duty to give it care. A noticeable fact is, that the homes of none, either rich or poor, are free from this evil, and it should receive careful attention, lest it result in vicious habit. Purity of action will follow purity of thought. In regard to cleanliness of person, the query was made, why it is that so many children who run about dirty and without care are well and hearty, while many who receive particular attention in this respect are

subject to colds and attacks of disease? In regard to the cleanliness of the house, particular consideration was given by the speaker to the keeping of the cellar and storehouse (which are often sadly neglected and made repositories for decaying fruits and vegetables) in good order, as they frequently become sources of diseases like diphtheria, fever, etc. This neglect often arises, not through carelessness or shiftlessness, but from ignorance of the pernicious results. After urging cleanliness of the premises surrounding the home, the speaker took exception to one point offered by the author of the paper, in that she favored a sleeping apartment with merely the chill taken off, but would even prefer a cold bed-room to one of high temperature. In conclusion, it was observed that it is hard to change the ways of a long-established and well-regulated household, and the proper place to begin reform is by teaching the young the law of cause and effect, and in time a higher degree of perfection in sanitary matters will be attained.

Professor Woodrow opened his remarks by offering the probable answer to the query propounded by the previous speaker, being that the child who runs about dirty and apparently without care enjoys vigorous and healthful exercise, and probably much of it out in the pure, open air, while the other child is pampered and shut up, and thereby deprived of its share of nature's gifts. He also discussed at length the question of bedding, finally requesting the family to retire the old feather-bed on which the last three generations had lived and died, and make the substitution of new springs and mattresses. In conclusion, he suggested that the great mortality of infants was probably due to inherited weaknesses and disease, which were nurtured, rather than opposed, by the environment of a helpless child.

Dr. W. A. Phillips, jr., of Salina, followed, under the title, "Watchman, Tell Us," with an able and exhaustive discourse upon the subject of "Rabies." The origin, cause, symptoms, treatment and prognosis were dwelt upon in detail. During most of the address, the speaker used neither notes nor manuscript, and we are thus unfortunately prevented from giving his conclusions in detail. He extolled the Pasteur treatment, giving the statistics of the results obtained in the hospital at Chicago, and elsewhere. Generally speaking, he held out a hopeful prognosis to those who might become afflicted with the dread disease.

The next discourse was by Prof. Charles Swisher, Normal University, Salina, upon

#### THE RELATION OF HABIT TO HEALTH AND DISEASE.

Every individual, by the repeated performance of one act, acquires such proficiency in its performance that but a small part of the energy used the first time is needed to execute it; and the amount of energy consumed decreases with each repetition of the act, until it requires very little conscious effort of the intellect and will. When so small an effort is required that the act seems to be done almost involuntarily, it is a habit. Not only this; there is with it a strong tendency to perform the acts which have become habits without much of an incentive to do so. But a small hint is necessary to the habitual user of tobacco to get him to smoke a cigar; a very



strong one is necessary to him who has not yet formed the habit. The great preponderance of energy demanded by the first smoke, over that of the last, is easily discernible by the individual of experience. Likewise the first shave, the first dance, the first letter to a sweetheart, the first pair of pantaloons, the first pair of red-topped boots, the first hotel experience, the first stump speech, draws more heavily upon a person's energy than subsequent efforts of the same kind. And it is well that the energy needed at the beginning is not required for each subsequent effort, for, were it so, our faces would be always flushed, our stomachs always rebellious, and our mental state nigh unto dementia.

The individual is a bundle of habits, at least it has so been hinted by some one or other. Man rises, eats, works, talks, swears, smiles, frowns and sleeps by habit. At least, he gradually does them involuntarily, and without much ado. More men remain Republicans and Democrats, farmers, lawyers, Christians and Mohammedans from habit, than from any other cause. Man sticks to his vocation because it has become habitual to him. Let other vocations be as easy to him, and he would doubtless shift from one to the other upon slight reason.

Beauty, both of body and mind, is, to a large degree, the result of habit; likewise ugliness, with all its repulsive and repellent characteristics. The painter paints, the poet sings, the sculptor chisels, the ordinary man plies his ordinary vocation, and does it well only when the larger part of the work has become habitual. Mediocrity, careful of her habits, often climbs higher upon the ladder of execution than her brilliant competitor.

It even requires habit to wear a starched shirt without a severe strain, both mental and physical. Even a collar or a pair of cuffs are somewhat inconvenient to the tyro. Every article of wearing apparel is not comfortable until habit, kindly habit, makes us unconscious of the new order of things. Let a man wear for a short time a corset, bustle, or some other article of wearing apparel to which he has not devoted himself—even a skirt, divided or whole—and the difference between habit and the absence of habit will soon be revealed unto him.

Habit gives ease, accuracy and rapidity in execution. It constitutes the major part of the mature man, whether he be near unto a devil or like unto an angel. He who is without habits is yet in the preparatory school—has not prepared his commencement oration, and is altogether green and sappy, not dry and tough, seasoned for work.

With this powerful factor in the development of the human race, the question of its relation to health and disease forms one of the important problems of its welfare. What effect do habits have upon health, and what upon disease? What preventives must be used in the formation of habits in order to stay the ravages of disease and secure good health? The skillful physician gives no prescription until he has a knowledge of the patient's habits. Not that habits are diseases, but that they prepare for disease, or fortify against it. Health itself, in the present development of medicine, seems to be that state of the body which keeps it from being the habitat of other forms of life; disease, that state in which the body does become a fit place for other life. Such habits, then, are to be commended which will render man unfit for the propagation of foreign life. To do this requires that preventive measures should be taken in the formation of habits, as the only manner in which true preventive remedies may be applied.

The formation of habits naturally divides into two great classes—those formed by heredity, and those formed by environment. As to hereditary habits, not much can be done in the present state of society. Individuals possessing habits favorable to disease become fathers and mothers of children who inherit the habits of their parents, or at least a strong tendency to repeat them. Marriages of all kinds are

contracted regardless of what humanity may inherit. A tendency to a great many diseases, if not the diseases themselves, is transmitted from parent to offspring. In this matter man knows a great deal, but is helpless to execute his knowledge. Cupid baffles his best efforts, and smiles at his discomfiture. The children of such ill-sorted unions need to be carefully trained in their habits, in order to overcome, if possible, the grasp which disease has already secured upon them. Alcoholism in the parent tends to reproduce itself in the child. This is also true of quite a number of habits which are so detrimental as to be classed as diseases by some writers.

"Moral suasion" seems to be about the only power which can be brought to bear upon marriages of such people, and at present it does not seem to have any great effect. All efforts are directed towards protecting the unfortunate child of such union from following its parents.

It is with environments, then, that the greater part of preventive remedies must be taken. First and foremost of these is cleanliness. It has been said to be next to godliness. Anyhow, it is very essential in order to enhance the length of an individual's stay upon this planet. Cleanliness is largely a matter of habit. In the individual, if the body has been kept clean, it is necessary to enjoyment that it remain so; if dirty, that condition, also, seems necessary to enjoyment—both necessary, because both are habitual to their possessors. A dirty face easily becomes a matter of habit; so does a clean one. If mothers would make more use of this latter fact, fewer children would be the victims of certain diseases which follow uncleanness. A child soon learns to want to be clean and tidy if proper measures are taken in the beginning. "A dirty child is said to be the mother's disgrace." The father ought to be included in the same truism. Under such circumstances, the child too often develops into an unclean, dirty man or woman—one that is dirty not by heredity, but by environment, or, perhaps, by both.

It is here that environment exerts its strongest power, and here powerful manifestoes, strong decrees, or anything else which can have an influence for the eradication of dirtiness from babies, should be used. Teach the babies cleanliness if you want them to be healthy, wealthy, and wise.

Refuse matter is the proper breeding ground or propagating garden of pestilence, plague, and all kinds of contagious diseases.

Upon the streets of some cities no refuse matter of any kind, not even a piece of paper, is allowed to be thrown. The enforcement of such a law wards off disease and eradicates unclean habits among the citizens.

Too often are cities allowed to become reservoirs of filth, only cleaned when the disease that revels in such slime has attacked the inhabitants and secured many victims.

Regularity in work is a habit that prevents much sickness. In the arms of Morpheus to-night at 10 o'clock and to-morrow night at 3 o'clock destroys the tonicity of the system. This golden opportunity is gladly made use of by the active microbe in its relentless struggle for existence. Eating in a voracious manner and at irregular times, and also of indigestible food, is hailed by the jolly bacillus as things quite to its advantage.

A choice should be carefully made of these habits which promote health, and they should be studiously acquired.

An upright carriage, elastic step and cheerful countenance carry dismay to bacteria.

Get the habits while in youth, and in old age they will not have forsaken you. So strong do they become that they are seldom changed, be they evil or good. Many a disease baffles the skill of the physician because the habits of the patient cannot be controlled. Habit—impartial habit—willingly gives her aid to either disease or

health; without a murmur she works equally well for either. It rests with man himself to use her for his best interests, to keep her from nourishing disease, or from becoming herself a disease.

Lack of time prevented the discussion of this valuable paper.

The next number upon the programme was a paper upon "The Ethics of Applied Physiology," by Dr. N. D. Tobey, of Salina. The doctor not being present, Rev. A. Schuyler, president of the Kansas Wesleyan University, read a paper upon

#### THE INFLUENCE OF THE MIND UPON THE BODY.

Doctor Schuyler spoke as follows:

The body is the connecting link between the mind and the external world. The relation of the mind and body is not one-sided, but reciprocal. Any comprehensive investigation of their relations must inquire, not solely into the influence of the body upon the mind, or of the mind upon the body, but into their mutual efficiency.

The word *mind* has been used, in the wide sense, as equivalent to soul, with its three-fold faculties of intellect, sensibility, and will, whose functions, are, respectively, cognition, feeling, and volition, or, in the narrower sense, as synonymous with the intellect or power of cognition. In this paper we shall use the word in its broader sense, signifying intellect, sensibility, and will, and consequently as including the phenomena of cognition, feeling, and volition.

By mind as intellect, we mean the ability to think or to know; by mind as sensibility, we mean its susceptibility of feeling, including sensation, appetite, emotion, desire or aversion, and affection, benevolent or malevolent; by mind as will, we mean the power of choice or volition.

Knowledge implies an object known, a subject which knows, and a certain relation of object and subject. The relation is as essential to the knowledge as either the object or the subject. There are, no doubt, countless objects in China and Japan of which we are entirely ignorant. The objects exist, and our minds exist, but we have no knowledge of them, because they are beyond the range of our powers of perception. To be perceived, objects must be in such relations to us as to affect the organs of one or more of our senses. Visible objects reflect light to the eye, audible objects send impulses to the ear, tangible objects must be in contact with the organs of touch, sapid objects with the organs of taste, and odorous objects must send gaseous effluvia to the organs of smell.

These objects excite the various organs of sense, and this excitement, which is the reaction of the nervous system, induced by the action of the exciting cause, is accompanied or immediately followed by a sensation. The mind at once apprehends itself as the subject of the sensation, and realizing that, in the sensation, it is not active but passive, it apprehends the necessity of some foreign or external object as the cause. The judgment, guided by the light of experience, decides that the cause is a certain thing, which the imagination then ideates or pictures so as to represent the decision or inference which the judgment has made concerning the object. This idea is then committed to the retentive capacity of the memory, to be recalled, represented and recognized as occasion may require. The ideas thus acquired are generalized by the logical power, and worked up into the higher forms of thought, as concepts, judgments, and arguments. The various components—the external object, its action on one or more of the organs of sense; the excitement of the organ, the accompanying sensation; the rational apprehension of the conditional

necessity of the subject, and of the exciting cause; the act of the judgment inferring the nature of the cause, and the ideation of the inference—are all essential to the act of perception. If error or illusion enters at all into the process of perception, it enters with the judgment, which may be at fault. The object is real, its action upon the organ is real, the excitement of the nervous system is real, so is the sensation, also the intuition of the necessity of the subject and of an object, but the judgment may not be true, and the erroneous judgment is followed by an illusive idea. Thus, I see a person approaching at a distance, and judge him to be a certain well-known acquaintance. In idea, I represent him accordingly, and everything seems clear. On his approaching a little nearer, I discover certain peculiarities which are inconsistent with the supposition that the individual is that particular person, and now my mind is thrown into a state of uncertainty. But on a still nearer approach, other particulars flash on my view, dispelling all doubt, and revealing the person as a familiar friend. No doubt many of my hearers have frequently had similar experiences.

A curious illustration of the influence of the imagination on perception occurred at the conflagration of the Crystal Palace, at New York, in the winter of 1866-'67. Many of the animals kept in the building were destroyed by the fire, but it was supposed that the chimpanzee had succeeded in escaping from his cage. People saw the animal, as they thought, struggling to get astride one of the iron ribs. The struggles of the animal were watched with breathless suspense. This continued for about 15 minutes, when it was discovered that all this sympathy was wasted on a piece of a window shade, so torn as to resemble, to the expectant eye, the body, arms and legs of an ape. Such instances illustrate the fact that, when in a state of expectancy, the judgment decides, in accordance with the expectation, that any resembling object is the object itself; the idea embodying the erroneous judgment is consequently illusive.

Ideas, true or illusive, affect our sensibilities, awaken emotion, excite desire or aversion, call out our benevolent or malevolent affections, induce volition, followed by corresponding action. A beautiful apple, of well-known excellent flavor, perceived by a hungry lover of fruit, excites his appetite, induces desire, which is likely to be followed by volition and the act of appropriation.

Certain feelings can be excluded by using the means to excite other feelings. The celebrated Doctor Hunter was once requested to submit to be magnetized. He consented, believing, as he says, "that if any person is affected by it, it must be by the imagination being worked up by attention to the part affected, and thinking I could counteract this, I went. . . . When the magnetizer began his operations, and informed me that I should feel it first at the roots of my nails of that hand nearest the apparatus, I fixed my attention on my great toe, where I was wishing to have a fit of the gout; and I am confident that I can fix my attention on any part until I have a sensation in that part. Whenever I found myself attending to the operator's tricks, I fell to work with my great toe, by which means I prevented the operation of the magnetizer from having any effect on me."

The physiologist, Müller, says: "It may be stated, as a general fact, that any state of the body which is conceived to be approaching, and which is expected with certain confidence and certainty of its occurrence, will be very prone to ensue, as the mere result of that idea, if it does not lie beyond the bounds of possibility."

Mr. Braid, who made experiments on an extensive scale, says: "The oftener patients are hypnotized, the more susceptible they become from association of ideas and habit, and in this way they are liable to be affected entirely through the imagination. Thus, if they consider or imagine there is something doing from which

they are to be affected, they will become affected; but on the contrary, the most expert hypnotist in the world may exert all his endeavors in vain, if the party does not expect it, and mentally and bodily comply, and thus yield to it."

It is simply commonplace knowledge, that thinking of savory food makes the mouth water; that fear blanches the cheek; that certain suggestions bring the blush; that exciting news, good or bad, takes away the appetite; that hope of good fortune animates the spirits, and causes the life-blood to circulate with a stronger current; and that disappointment depresses the spirits, and despair paralyzes effort.

There is, no doubt, a vast amount of quackery in mesmerism, spiritualism, faith-cure, and christian science; but it remains a fact that anything which long retains a foot-hold has in it some element of truth. The hold it thus gets on the public mind is the source of the mischief. Distinguished members of the medical profession and Boards of Health have thought it wise to investigate these marvelous phenomena, to cull out the truth, eliminate the error, and thus take whatever is available out of the hands of ignorant charlatans, by showing that the regular practitioner knows all that the quack, or self-styled specialist, knows about these phenomena, and indefinitely more.

The celebrated Doctor Rush charged his students to remember "how many of our most useful remedies have been discovered by quacks," and adds, "do not be afraid, therefore, of conversing with them, and profiting by their ignorance and temerity."

A French commission on animal magnetism reported: "As to imagination, we know the derangement which a vivid and sudden impression has often occasioned in the human machinery. The imagination renews or suspends the animal functions; it animates by hope, or freezes by fear; in a single night it turns the hair white; in a moment it restores the use of the limbs or speech; it destroys or develops the germs of disease; it even causes death."

Sympathy is very powerful in its effects. One in deep sympathy with another in distress has a similar feeling, and not only has fellow feeling but is led to imitation, which is sympathy reduced to idea and embodied in action. Imitation merely copies, and hence is limited by the facts; but imagination combines facts, or elements given by experience, into new wholes; while imitation enters largely into the formation of habits, imagination extends and modifies indefinitely, and thus forms ideals for action.

There is in human nature a tendency to implicit faith in the statements of others. This faith receives rude shocks through the experience of deception, and thus learns caution. A person in the hypnotic state is put back into the credulity of childhood, and believes whatever the operator says. This faith makes the assertion of the operator seem true, and thus affects the subject's power of action. When the magnetizer places his subject's hand on the table, and after making a few passes over it, tells him he cannot lift it, he believes the assertion, and is unable to lift his hand. Believing it to be impossible, he does not will to do it. He can be made to feel warm or cold, or hungry, at the pleasure of the operator.

Epidemics, no doubt, have a physical cause; but there is reason to believe that large numbers are affected through expectation, sympathy, and imitation. It follows that absorption of the mind by some engrossing pursuit, as upon a work of art, or an invention, or literary work of any kind, would be a safe-guard against contagious disease so far as sympathy, imitation or expectation are concerned, and with ordinary sanitary care might even enable one to resist the *physical* cause of the contagion, and to pass unscathed through the period of a wide-spread epidemic unconscious of the threatening danger. Newton carried on his profound mathematical and as-

tronomical investigations, serenely oblivious of the fact that the plague was then ravaging England.

Expectation induces or prevents sleep, or causes one to awake at a certain hour.

The surgeon of a certain hospital administered sweetened water to all the patients, and then pretended that by mistake he had administered an emetic. Four-fifths of the number exhibited the usual effects of such medicine.

Many remarkable instances of mental states in causing disease are given by Doctor Luke in his work on the "Influence of the Mind on the Body." He says that in 67 cases of epilepsy 35 were traced to fright. Instances have occurred in which fright resulted in idiocy. Undue excitement aggravates or even induces hysteria. During intense revival meetings such phenomena as the jerks, swoons and trances are often witnessed.

Doctor Luke says: "It is possible that persons who have been attacked with hydrophobia symptoms, after the bite of a dog doubtfully mad, have suffered from the fearful anticipation of the disease only, and not from any canine virus, the inference drawn in such cases, that the animal is laboring under the disease, being too hasty. When a wound has been inflicted by a really rabid animal, and no effects have followed until many months after, emotional excitement may be the occasion of the outbreak of the symptoms, especially should it be in the form of fear, and should the nerves at the time be in a susceptible state."

Doctor Rush holds the same opinion in regard to hydrophobia.

Trousseau reports a case of chorea, or St. Vitus' dance, occasioned by fright, and another by grief from the death of a sister. Many similar instances could readily be collected. Spasms, more or less allied to chorea, are often induced by fear, or grief, or anger.

Doctor Todd gives the case of a man who was rendered speechless by the excitement and vehement contradictions in an argument.

Sudden joy or fear or grief affects the action of the heart, and sometimes causes death. The doorkeeper of Congress, during the American Revolution, an aged man, died suddenly, it is supposed from joy, on hearing the news of the surrender of Lord Cornwallis.

Tissot reports, on the authority of Hoffman, that a man believed that he saw and was seized by a specter; he was terribly frightened; one of his feet became red and swollen, and he became convulsed and delirious.

Diseases are not only induced but cured by mental states. Faith in the physician and in the efficacy of his remedies undoubtedly coöperates with the remedies themselves in arresting the progress of the disease. Because medicine sometimes cures when the patient has no faith in it, we are no more warranted in concluding that faith and hope are of no avail, than we are that medicine is useless because sometimes favorable mental states alone effect a cure.

An habitual drunkard, after drinking a glass of toddy, was seized with a violent attack of rheumatism, which, though induced by another cause, he associated with the liquor, and immediately conceived such a loathing for intoxicating drinks that he became a sober man.

A gentleman, having failed in many attempts to cure his wife of drunkenness, resolved to give her an opportunity to drink herself to death. Accordingly he procured a barrel of rum, which he tapped and placed in a room, leaving the key in the door as if he had forgotten it. She, suspecting his motive, out of pure spite, left off drinking altogether.

A gentleman whose wife had made up her mind to die cured her by making love to his cousin. His wife determined to thwart such iniquity, resolved not to die, and actually recovered.

In certain cases a powerful effort of the will has proved efficacious. A gentleman who had been bitten by a rabid cat had, after three months, violent symptoms of hydrophobia. He was greatly alarmed, but resolved not to succumb to the malady. He took his gun and went out to hunt. He says: "I walked the whole afternoon, exerting, at every step, a strong mental effort against the disease. When I returned at night I was decidedly better. The next morning the aching went down to the elbow; the following day it went down to the wrists, and the third day left me altogether."

The celebrated preacher, Edward Irving, had an attack of cholera shortly before his hour to preach. Though scarcely able to stand, he resolved to go, and tottered to his church. As he entered the pulpit the crisis came. He says: "That instant a cold sweat, chill as the hand of death, broke out all over my body, and stood in large drops upon my forehead and hands. From that moment I seemed strengthened." After preaching a powerful sermon, with more than his usual unction, for upwards of an hour, he went home, entirely well.

The examples given show the powerful influence of the mind upon the body.

Grief, fright, anger, shame, anxiety, anticipated evil, undue excitement and a troubled conscience are all unfavorable to health. On the other hand, hope, moderate joy, contentment, prosperity, congenial social relations, a mind well trained and well occupied, a resolute will, but, above all, a good conscience and faith in God, are sanitary conditions whose value can scarcely be overestimated.

The next paper was by Dr. D. R. Pelton, of Topeka, upon

#### THE EFFECT OF ALCOHOL UPON THE HUMAN SYSTEM.

Alcoholic liquors are so often the cause of disease and death, directly and indirectly, that it needs no apology for my addressing you upon the subject of their use and abuse.

Were I to address medical gentlemen alone, I should, perhaps, be more technical in my anatomy and physiology, but, under these very pleasant circumstances, I will agree with you that a comprehension of facts is of more importance than technical terms.

The phase of the discussion which I shall give will be in the direction of the effect of alcoholic liquors upon the human system, or temperance hygiene.

I shall not have time to describe in full the effects of alcohol upon the structure of the human system, and its relation to personal hygiene, but will confine my address to some of the most common effects, which are easily detected by the eyes of the public.

When we speak of hygiene we mean the preservation of health, and to be able to understand the means used, and to apply them, we must first understand the system to which they are to be applied.

If we were given charge of a machine, and were responsible for its being kept in order, we would first have to know the whole structure and its intricate workings. So of the body. We should know its every structure and all its natural functions, if we would know how to preserve them in a healthy condition.

Chemically, our bodies are not different from all other materials which exist. The lime, soda, potassa, the fibrine, the gluten, gelatine, the iron, phosphates, carbonates, etc., as well as the gaseous substances, oxygen, hydrogen, and nitrogen, are identical with those that go to build up all structures of the earth. We move, we feel, we think, while they, in their primitive state, are lifeless, and without perception or thought. It is strange, but true. The mystery lies here: We have a vital force, a power, if you please, created for the special purpose of endowing the molecules and

cells of our body with the faculty of union with their fellows, budding, dividing, multiplying, and reorganizing, to form the great structures of our human frame. It also gives them the power to convert these primitive elements to their use and support, that they may take them up, atom by atom, as a mason will take his brick, and so build our visible corporate structure.

We are, in form, material, but vitalized by the quickening forces of God, and yet depending upon proper constituents and a proper relation of the materials entering into our formation.

If we could see these molecules, I believe we would find them composed of two primitive elements; organized, they form a protoplasmic substance, which is a matter consisting of vital power, whose office is to build and occupy a house, a little cell, in which they live, and which is a part of them. These cells perform their office, and multiply their species, if I may be allowed the term, and exert their power of differential action, and take their place once more in the outer world as dead matter, after transmitting force and their power of life to their offspring. These cells compose every part of the body; the bone, the muscle, the nerve, are all builded of them.

To form muscles, these cells are arranged in lines, end to end, like so many beads placed upon a thread, and observing certain laws of union. These string-like formations compose little fibrillæ, measuring in diameter about one twenty-thousandth of an inch, and when gathered in bundles and held by the connective myolemma tissue, make small fibrillæ you can just discern by your naked eye in the muscles of the body. Then these fibrils are gathered into bundles, and these bundles into larger bundles, to form the muscles surrounding our frame, and giving it strength and rotundity.

Now, the movements of the body are caused by a contraction of the muscles, brought about by the power of the will sent along the nerve trunk. In the contraction of the muscle, if we could examine these small, nucleated cells, we could see that the contractions were caused by the swelling out, transversely, of their little bodies, and the lessening of their longitudinal diameters. When taking place in a large portion of the muscle at one time, it causes very rapid, marked shortening of the muscles. This act of contraction causes the death of some of these cells, and, like the solid column of soldiers in battle line, when one comrade staggers and falls, immediately another steps forth to fill the vacant rank. So rapid is this breaking, disintegrating and removing of tissues, that about every seven years our material body is changed. Such are the forces of life, for the condition of life is death. Of such a structure is every organ and part of the body composed; differently arranged, it is true, to form the different tissues, planned and governed by the immutable law, vital force.

As the life and health of our country depend upon the work of the farmer, the mechanic, the tradesman, and the professional man, each in his proper business, so does the body depend upon the healthy performance of all its organs, and when these are hindered or obstructed in their physiological action, disease and premature death are inevitable.

The stomach is one of the first organs misused, it being the great source of aliment and receptacle for nourishment. It soon becomes diseased by misuse and abuse, failing to do its duty, and so starves the blood, the tissues, and the brain.

The mucous membrane of the stomach is covered with a network of blood vessels, thickly studded with mucous follicles and glands, which secrete the gastric juice in sufficient quantity to transform the food into a solution or chyme, then changing it into peptones and albumenoses, preparatory to absorption and construction. The most active part of the gastric juice is the pepsin, which acts by dividing casein



muscaline and albumen, preparing them for their entrance into the great avenues of life—the vessels of the body; after which they are changed into food for the vital tissues, becoming muscles, nerves, and bones.

It takes a large amount of gastric juice to prepare the food for this purpose, about 20 parts to one of albumen being necessary to perform this function correctly. While these chemical changes are going on, the stomach is performing its alternate contraction and relaxation to facilitate the breaking up of the particles of food, while its temperature at this time remains at about 100 degrees Fahrenheit.

No food can be appropriated to the use of the system without first being subjected to these catalytic changes by the gastric juices. Strong, firm and immutable are the laws of nature. The laws of man are changeable, but the laws of nature are eternal.

After a moderate amount of alcoholic liquor has been taken into the stomach, if you could see its action you would notice the mucous membrane becoming reddened and congested, changing from its normal color to a bright pink hue, and increasing its susceptibility, which, if continued daily, would result in sub-acute or chronic inflammation. Also, when the alcohol comes in contact with the gastric juice it acts upon that fluid by precipitating the pepsin, which is absolutely necessary for the digestion of the food, preventing this all-important function, and compelling the food to lie for hours undigested until the alcohol becomes absorbed and a new supply of gastric juice is secreted by the irritated glands. The alcohol undergoes no appreciable change, but is taken up quickly by the veins and absorbents of the stomach and hurried on through the portal circulation into the liver, there to leave its destructive effects upon the cells and glandular structure that make up this great regulator of life, by preventing its activity, hardening its connective tissue, and producing contraction or enlargement by congestion and inflammation. Now the free circulation through its veins is obstructed, causing a transudation of the serum of the blood through the coats of the vessels into the different cavities of the body, and into the areolar tissue, making that bloated and pussy condition so often noticeable in the spirit-drinker, and eventually ending in death.

But the alcohol cannot stop here longer than to touch the cells composing the tissues with the finger of death, as it passes rapidly on, on to the great channel of the life current of the body, the blood.

The blood is composed of plasma and globules or corpuscles, red and white. The plasma is composed of fibrine, albumen, salts of different kinds, and water, held in perfect solution, destined to feed the various tissues of the body. The globules which float in the plasma are from  $\frac{1}{3500}$  to  $\frac{1}{2500}$  part of an inch in diameter, and are borne in the circulation of the blood through the entire circuit of the body in about 25 seconds of time—hurried on like the express trains of the Northern Pacific, to be returned by the transportation of the South.

We are more particularly interested now in the red corpuscles, because of their peculiar nature. They are red, flattened discs, and they give the bright red hue to the blood. Their office is to transport oxygen from the lungs, where it is inhaled, to the tissues of the body, there to give up their freight of life-sustaining gas in exchange for the carbonic acid gas, which, through the venous system, is delivered to the lungs to be exhaled. They repeat their journey until at last they die, and then are consumed in the production of heat for the body, passing again into innate matter to be utilized by the lower organisms of life. As these little corpuscles, or carriers, pass on their course, loaded with oxygen, they have a strong affinity for the hydrocarbon in the blood, and the dead tissues, like old crumbling brick, are attacked by chemical action and burned, consumed thus for the purpose of preserving the temperature of the body, and disposing of the now useless matter in the system.

This exchange of gases is performed in two distinct portions of the body—the lungs and the nucleated cells of the tissues.

The air-cells of the lungs furnish a total area of 1,400 square feet, this only affording sufficient space for the efficient performance of their functions, as at each inspiration we inhale 20 cubic inches of air, diluting the oxygen gas, which is to be sent forward for the vitalizing of the tissues.

We will now consider the alcohol which has just entered the blood. It being a hydrocarbon, we notice, as it circulates through the liquid of life, that, if in large enough quantities, it demands the entire surrender of the oxygen held by the corpuscles, at once entering into chemical union with it, and leaving in its place carbonic acid gas and aldehyde, which are the remains of the decomposed alcohol. Here combustion of the alcohol takes place, instead of combustion of the dead tissues, the remains of disintegration, as ought to have been the case. Thus the alcohol remains, interfering with the natural functions of life, and loading the blood and tissues with the debris of the broken-down cells.

Again the blood corpuscles fly to the lungs for oxygen, propelled by the quickening beat of the heart, stimulated by the anxious nerves, which instinctively apprehend the danger of injury and destruction. But combustion is so rapid, and the formation of carbonic acid gas and aldehyde is so great, that the lungs, though containing 1,400 square feet of superficial area in their air-cells, cannot rid the blood of its poison, and the individual falls upon the ground insensible, in a state of intoxication.

Only a portion of this element of fire can be changed here; in less time than we can think it is driven on, and is doing its work in the tissues of the body. From heart to lungs, and back to heart, then through the systemic course it goes, and reaches again the great fountain in less than 25 seconds of time, and yet, as it has passed on its rapid course, it has left here and there along its track the marks of the finger of death.

It is believed by some physiologists that the power of the system to resist disease lies in the vitality of the cells and white corpuscles of the blood, which they call phagocytes. They claim that these have the ability to absorb and digest, under favorable circumstances, the bacteria of disease when they are introduced into the system.

If this be true, it furnishes us a ready explanation why alcohol lessens the power of resistance to disease. It weakens the vital powers of those cells, so they are unable to withstand the invasion of the microbe, but are themselves destroyed, allowing the bacteria to invade the blood and the various parts of the body.

According to Professor Wood, of Philadelphia, the effect of carbonic acid gas, when taken by inhalation, is to lessen arterial pressure and reduce the frequency of the pulse. Its effect upon arterial pressure is caused by the paralyzing of the inhibitory centers of the vaso-motor nerve. Now, when a substance like alcohol is introduced into the blood by way of the stomach, it produces a similar effect, with perhaps this difference, that, with alcohol, the terminal filaments of the nerves are first stimulated, causing a temporary rise, and afterward a fall, of the blood pressure, accompanied by reduction of the heart's action, through paralyzation of the medullary center.

There is this difference in the process of introduction, however, that carbonic acid gas, when inhaled, prevents the entrance of oxygen into the blood, while alcohol extracts oxygen from the corpuscles and converts it, by chemical action, into carbonic acid and aldehyde, which may undergo some further changes before elimination. Thus the immediate effect is not as rapid and alarming, but the results are more sure and lasting. The tissues are not only robbed of the vital gas, but poison-

ous substances are deposited in its place, to be eliminated by the overtaxed excretory organs.

Alcohol paralyzes the trophic centers, thereby preventing the physiological action of the cells composing the tissues. As the amount of vital force depends upon the trophic changes in these cells, you can readily see how alcohol lessens the possibility of life. It prevents the assimilation of food by these neucleated cells. It further causes changes in the structure of the blood globules and, as before stated, fills the blood with effete matter by its chemical action.

You must remember that when you prevent the vital changes of these neucleated cells you prevent life, for by their continual action comes vital force, and cessation of this force is death. In some cases there has been observed a rise of temperature in the giving of alcohol with no subsequent fall. When this is the case, it depends upon the increased amount of combustion in the blood, but always at the expense of the oxygen gas for which the tissues are starving.

Alcohol is not food: it cannot replace the dead and crumbling tissue; it gives no support to the brain, or substance to muscle, or strength to bone, but stands in the way of nature and interferes with her process of repair. Wherever it goes through the body, if not burned by the oxygen, or chemically changed, it is alcohol still, acting upon the organs of excretion and the avenues of elimination, while much of it is passed off in its free state by the skin and breath.

You may ask what becomes of the dead material which is remaining in the blood and tissue unconsumed? It is changed into fat, and where the muscle is disintegrated and broken down, it is deposited. Thus the muscle is depraved, flabby, and becomes weak and powerless to do its work.

You hear of "fatty degeneration of the heart" in the drinker, and this is the way in which it is produced.

The coats of the blood-vessels are attacked by the alcohol, and they become weakened and thinned, allowing the serum and water of the blood to pass through into the tissues, puffing out the flesh and skin, causing it to look bloated and shining, red and glassy, as is characteristic of the confirmed drunkard.

The coats of the vessels of the brain become tender and brittle, and under some excitement or extra exertion they give way, and the person is felled to the earth with a stroke of apoplexy; or, the heart, with its weakened walls, made so by the wasting away of its true muscular fiber, and the substitution of deposits of fat, ruptures, and the man drops suddenly, and dies.

Now, the amount of alcohol that an average healthy body can consume in itself by combustion, without serious detriment to tissue, is only about one ounce, or about two ounces of brandy, in 24 hours; an excess of this quantity, if not chemically changed in the blood, is eliminated by the kidneys, skin, and lungs. As the kidneys are laboring to eliminate the poison from the system, the capillary vessels become dilated to facilitate a more rapid circulation, and as the alcohol, which is drained away into the tubules of the kidneys, comes in contact with their structure, it produces cloudy swelling, or burns, sears, and destroys, by continual corrosion, their delicate cell lining, until perfect casts of these hair-like vessels are formed, and block the way. Soon this structure becomes inflamed and hardened, and after years of suffering, few or many, the drinker reaps the never-failing penalty of dissipation. Through the excessive elimination of the skin, it causes an inflammation of the sudoriferous glands and sebaceous follicles which are seated deep in the true skin, changing their function and producing what is called *acne rosacea*, or, the red nose of the drunkard, also the skin diseases called herpes and eczema.

Again, the skin becomes yellow from the obstruction of the circulation of bile through the hepatic glands, and compelling it to be again thrown into the systemic

circulation, to poison the blood and be at last deposited on the surface of the skin and sclerotic coats of the eye, where it is easily observed by all.

Neither are the lungs exempt from changes by the contact of the alcohol, for the eliminating process of the drug, by the lungs, brings it in contact with the air-cells and arterioles, and, combined with the perverted action of the pneumo-gastric nerve, causes congestion and effusion into the tissues of the lungs, producing what we call oedema. We perceive the manifestation of these changes by the sense of oppression in the chest, cough, and mucous râles, and often asthmatic breathing. Where this state of things continues, degenerative changes take place and the lung tissues break down, and sometimes the result is acute pulmonary phthisis, or, as is commonly termed, quick consumption.

When called to treat a serious injury or amputate a limb, our first thought for the safety of that man would be: Is he addicted to the use of alcoholic liquors? If so, his chances for recovery are greatly diminished, among such cases mortality being increased from 10 to 15 per cent. by the intemperate habit. In fact, some operations are entirely inadmissible on account of the patient being given to the use of liquor. The vital forces are decreased, the reparative process is retarded, and in amputation there is a great tendency to erysipelatous inflammation, gangrene, or to absolute failure of the vital force to unite the tissues.

The nucleated cells, which have been described, and which make up the muscular fiber, become diseased from contact with the alcohol. They lose their vital power and contractility from its hardening effect and the disorganization of the cell walls. Their power of budding and multiplying, which is necessary to supply the waste material, is seriously diminished; so much so, that when the use of spirituous liquors is commenced in childhood, their growth becomes stunted, and their figures dwarfed. It is reported by the army examiners of France, that 30 per cent. of the failures to comply with the military standard of height were the result of the use of alcoholic liquors.

The power of endurance in man depends largely upon the vital energy of these cells; therefore, their weakness subjects the human system to the ravages of disease. The niches in the walls of the tissues, made vacant by the disorganization of the molecules and protoplasms, are filled with a deposit of fat globules, which are in the system by reason, largely, of cell degeneration.

It has been proven beyond controversy, that cell protoplasm can degenerate into fat granules when its cellular energy is impaired; also, that free fats exist by over-taxation of the liver, and float in the system, to be deposited in the adipose tissue in superabundance.

In these individuals, people make the grave mistake of calling their over-distended, corpulent bodies evidence of muscular strength.

The subject of alcohol as a food, I will not discuss fully here, space not permitting, but I will say that the question hangs upon what we term food.

Food, according to the strict sense of the term, should comprise substances that furnish material for reconstruction; materials of which the nerve and tissue cells, with their protoplasmic substance, is composed. This alcohol cannot do, but, in a healthy system, only acts like the pirate upon the high seas, obstructing and destroying our carriers of commerce. As I before remarked, it intercepts the red corpuscles of the blood on their way to the tissues, demanding "your oxygen or your life."

I would call your attention to the calorimetric and physiological experiments of Lewis, Wood, Richert, and Desplatz.

The conclusions from these experiments may be stated as follows, viz.: That, in some rare cases, an increase of temperature following the ingestion of alcohol, the first hour; followed, always, by a gradual or rapid fall; that heat production was

caused by combustion in the blood, through union with the oxygen, and not in the tissue cells, as in healthy action; that heat dissipation was in excess of its production, and caused by vaso-motor paresis, consequently the lowering of the temperature of the body; that the carbonic acid gas eliminated in the blood undergoes subsequent changes which they were unable to determine.

Now, upon this basis—cell preservation by non-consumption, and yet body heat produced—some claim that alcohol, therefore, is food. This is a false theory. Let me explain.

You have a large establishment in which are kept many horses. Their food supply is brought to them by way of the avenues, to be consumed as needed. You now lock the entrance of your structure, deliver substitute material in the back yards and alleys, consume them by artificial decay and combustion, and, because there is evidence of combustion, and accumulation of debris, and work for drays, men, and scavengers, you say you have furnished food for animal life; but what say the horses? Their bones are ready to penetrate the skin; starvation has made its mark upon them. So with the tissue cells of man; they are starving for the oxygen necessary for their metabolic action, which is life; they cannot appropriate material to their structure; debris accumulates about the cells and protoplasms, arising from the expenditure of the little force remaining; even the blood corpuscles are debarred the privilege of removing it from the system.

In the year 1888 the British Medical Association secured 622 new names to an original list, subscribing to the following statement: "It is designed to call attention to the inconsiderate prescribing of large quantities of alcoholic liquors in disease as a grave danger, and to suggest a careful prescription, as in the case of a powerful drug, and for that occasion only."

Among the names appended to that list are Professor McKendrick, of Glasgow, Professor Simpson, of Edinburgh, Drs. Pittman, Playfair, Bristow, Duncan, Paget, and Briggs.

I recognize that there is a useful place for alcohol, although it should be hedged with impenetrable barriers and barred with steel.

If time would permit, I would like to speak of this powerful drug as a therapeutic agent in the hands of competent men, limited by its narrow scope of usefulness; not as a beverage, but as a powerful poison, which, like some others, may be of some benefit, when properly used in the treatment of some special diseases by a skillful physician.

Let the attitude which the medical profession shall take in this matter be such that no regrets shall appear upon the record.

The public looks to us as teachers and instructors of health.

May we ever use this power for the upbuilding of society, relief of pain, and lessening of poverty.

Doctor Bishop expressed his high appreciation of this paper, both because of the solid foundation upon which the argument was based, and the skillful manner in which the subject was presented. He thought if the convention had nothing more than the presentation of this single paper, it had abundantly justified its claim to favor.

Remarks commendatory of the paper were also made by Rev. J. N. Lockwood and others.

Upon motion of Doctor Bishop, it was resolved that the Topeka *Capital* be requested to publish the paper.

The convention then adjourned till 7:30 P. M.

## FOURTH SESSION.

DECEMBER 4, 1891.

The convention assembled at 7:45 P. M., Rev. W. Bishop, D.D., of Salina, presiding.

Musical selections were rendered by the Y. M. C. A. Quartette Club, and Salina Mandolin Club, after which Dr. R. A. Williams, of Olathe, member of the State Board of Health, read a paper, being in the nature of a report from him as a delegate to the International Congress of Hygiene and Demography, recently held in London.

## DOCTOR WILLIAMS'S REPORT.

As a delegate from our State Board of Health, duly certified by the Governor of the State, it was my privilege to attend the recent Congress upon Hygiene and Demography, held in the city of London, Eng., August 10 to 17, 1891.

The attendance was quite large, aggregating, at the opening meeting, more than 2,300 members and delegates. It was a meeting fit to be held in the largest city in the world. There were present, in attendance, the presidents of nearly all the medical corporations; representatives of the universities, and of the chief medical and scientific societies in the United Kingdom; delegates from nearly every country in the world, and from all our sanitary and medical schools; many official representatives of the English colonies, and from India; the lord mayor and sheriff of the city of London; the masters of the several city companies, and a considerable number of those who, here or elsewhere, have gained the highest renown in the study of public health, or the sciences allied to it.

The assembled delegates and members were there, not as diplomats, representing each his own country, endeavoring to frame his sentences in ambiguous language, capable of being construed into different meanings, or to take the advantage each of the other, for personal or national gain, but as philanthropists, hygienists, scientists, in all the branches that pertain to the uplifting of humanity, from a physical stand-point, and moral, too, because a nation that is physically degenerate, as truly as night follows day, will become, in time, also morally degenerated. The public-health interests were their sole objects, and they were there to inquire, each of the other, in what, in his experience, and in his country, lay the most potential causes affecting the health and longevity of the people.

His royal highness, the Prince of Wales, presided at the opening meeting, and delivered the address of welcome to the visiting members and delegations. He dwelt upon the importance to the people at large of the subjects which would be brought forward for discussion. Scarcely a family, he said, but had suffered in sickness or death from typhoid fever, diphtheria, or some other of those ailments which were classed among the preventable diseases.

Doctor Broudel, of France, paid a high and deserved tribute to the English people for the progress made in hygiene, and the lesson thus taught to other nations. The world must ever be their debtor for the protection against small-pox. He quoted the words of Disraeli, that the public health should be the first duty of a statesman, as the foundation upon which reposes the happiness of the people. It, alone, gave a country the greatest power.

The speaker recalled the name of Pasteur, to whom we are so largely indebted for the present enlightened treatment of epidemic and contagious diseases. For centuries they were believed to be propagated by the air, by effluvia, miasmatic

causes, etc., and it had remained for him to prove the existence of those germs to which we now believe these diseases owe their origin.

Doctor VonColer, of the Prussian army, showed that through hygienic teachings, in the years 1888-'89, in the army, 79,500 men less than the average for the 10 preceding years had applied for surgical or medical treatment, and that there had been a reduction of two-thirds in the death rate in the same time. Diseases like malaria, small-pox and dysentery having almost completely disappeared, and typhus fever and diphtheria becoming more and more diseases of the past, we have reason to be thankful for the development and application of hygienic principles.

Doctor Roth, of Germany, remarked that a hygienic congress in England was a striking event, although in strict accordance with the character of the English people. He referred, in this connection, to the labors of Edmund Alexander Parkes, the author of the memorable work on hygiene.

Dr. M. Joseph Korosi, as the representative of demographical statistics in Austria-Hungary, read a very interesting paper on demography. He stated that 30 years had passed since the international congress of statistics had met in London; that England deserved thanks for being the mother country of statistics, especially of demography, which, 220 years ago, was created in the hall of the Royal Society, the famous Halley becoming, 20 years later, the founder of its most important branch, biometry, through working out the first table of mortality.

Sir James Paget, physician to the queen, defined the purposes of the congress to be the means by which all nations of the earth might obtain, as soon as possible, not only longer life, but the highest possible state of health, both of body and mind.

The meeting then closed by a short address from the Prince of Wales.

The following morning the real work began. The congress was divided into divisions and sections, each paper and its discussion being assigned to its appropriate section, which met in a separate room.

Division one was subdivided into sections on: "Preventable Medicine," "Bacteriology," "The Relation of the Diseases of Animals to those of Man," "Infancy, Childhood, and School-life," "Chemistry and Physics in Relation to Hygiene," "Architecture in Relation to Hygiene," "Engineering in Relation to Hygiene," "Naval and Military Hygiene," and "State Hygiene." Division two, comprised the study of "Demography."

As all the sections were in session at the same time, I was forced to make a selection of topics, which I did, devoting my time chiefly to "Preventive Medicine," "State Hygiene," "Bacteriology," "Infancy, Childhood, and School-life," and "Demography."

General Cunningham read a paper on the "Modes of Preventing the Spread of Epidemic Diseases from one Country to Another," and his conclusions were, that of the three methods of preventing its spread, namely, quarantine, medical inspection, and sanitary improvement, the last named is of chiefest importance. He dismissed quarantine methods as useless and not justified by events. They ignored the march of sanitary science. Land quarantine was certainly useless, and sea quarantine had done no good. To medical inspection he allowed some merits.

In Havre, France, Doctor Gilbert stated that phthisis is every year making frightful ravages. The annual death rate is increasing, and the influence of the density of the population is manifest. Hereditary influence is practically *nil*; that of alcoholism, considerable. The prevention of disease in growing towns interested me, because of their possible application to the many rapidly-growing towns of Kansas. The conclusion was, that complete prevention in growing towns may perhaps remain an impossibility. Certainly it will not be promoted while people believe that epidemic disease is always an importation, and never the outcome of unwholesome

surroundings, nor while the location and sanitation of towns remain chiefly in the hands of private land-holders, speculative builders, etc., uninterested and unskilled in sanitary science.

Doctor Sisley, of London, read a paper upon the "Prevention of the Spread of Epidemic Influenza." He held that influenza occurs sporadically and endemically in China: that England suffers from an epidemic when the disease is imported. The disorder spreads along the line of human intercourse, and the infective material is not always wind-borne. The inhabitants of cities are affected before those who live in villages. The chief means which should be adopted to prevent the spread of influenza are: (1) Hygienic. The spread of the disease is less rapid where general hygienic measures are carried out. (2) The use of prophylactics. Quinine is not a certain prophylactic, but there is some evidence in favor of the application of a solution of boracic acid to the conjunctivæ of those exposed to the infection. (3) The avoidance of infection is of the greatest importance. People suffering from the disease should not give parties or go to public entertainments.

Every one, as far as possible, and particularly the aged and those in delicate health, should avoid contact with patients affected with the disease. Parcels and letters should be disinfected. Great care should be taken not to introduce the disease into public institutions. Experience shows that when once introduced it spreads rapidly, where many people are congregated in a confined space. Elementary schools should be closed.

The "Disinfection of Scarlet Fever and other Infectious Fevers by Antiseptic Inunction," was the interesting subject of a paper by J. Breden Corgen. The results were of sufficient value to warrant a further trial. He said that none of the ordinary disinfectants now in use are suitable for inunction, over the whole body, of a young child. The bichloride and biniodide of mercury are too poisonous; the same with carbolic acid. A 10 per cent. solution of carbolic acid in oil has no effect on bacteria. Neither have its vapors, given off at the ordinary temperature, any effect on bacteria or germs of any description. Jay's fluid is an emulsion of a resinous soap, creoline, phenol, etc., in solution. Thymol, resorcin and other germicides have been tried in lanoline, vasoline and lard without success, and to the great discomfort of the patient. Tucker's eucalyptus disinfectant has an advantage over all the preceding, in that it is entirely volatile, consisting of thymol and some essential oils, dissolved in the oil of *Eucalyptus globulus*. It is not poisonous, like carbolic acid and the mercury salts. It does not interfere with the action of the skin, as do fats and thick oils, and its inunction produces a slight stimulating effect. The rash appears brighter but fades away more rapidly, in ordinary cases disappearing in 24 hours. The temperature falls rapidly after the commencement of treatment, and reaches normal, or below 99, from the third to the sixth day. In uncomplicated cases the pulse falls below 100 before the third day, and reaches normal about the sixth day. Desquamation commences soon after the rash disappears, and occurs only on those portions of the skin occupied by the rash. It ends from the tenth to the fifteenth day. The falling cuticle does not convey any infection; the patients can safely mix with others after the tenth day. No isolation, as now understood, is necessary; children can frequent the room without taking the disease. Albuminuria is absent, or it only appears in a slight degree.

In patients treated by inunction, the disinfection of the bedding and room is accomplished with the treatment of the patient. The volatile oils and their vapors penetrate the clothing, and pervade every part of the room. The cases he gave illustrated the opinions advanced. A reasonable inference would be, that if it was of value in contagious diseases, it might also be of some value in diseases arising from a specific germ, as typhoid fever and others, of an infectious nature.



The results of inquiries and experiments concerning over-pressure of the brain, by Professor Vergerstein, of Vienna, led to the conclusion that one hour's steady work with children, even though the subject be an interesting one, produces in them a certain amount of fatigue. To demonstrate the fluctuation of brain power of children during one hour's occupation with a familiar subject, simple addition and multiplication sums were given to boys and girls, with average ages of 11 and 11½ years for boys, and 12 and 13 years for girls. The mistakes were compared with the mistakes of the second and third hours, and were found to be much less during the first hour. It is desirable that the question of mental over-pressure should be investigated by exact experimental methods, and, until thus carefully investigated, school lessons generally should not last longer than three-fourths of an hour.

The sum of the conclusions under the head of "The Relation of Animal Diseases to Man" were, that tuberculosis, though principally arising within man himself, nevertheless is frequently transmitted through eating of the flesh and drinking the milk of tuberculous animals; and several epidemics of scarlet fever, diphtheria, typhus and typhoid fever have been directly traced to either the milk coming from diseased animals, or to its contamination *en route* to its place of distribution; that, though in the past, most countries had paid but slight attention to the sanitary questions involved in the milk supply, contenting themselves with forbidding the sale of adulterated milk, or of milk from diseased animals, without always enforcing this decree, it is the duty of the state to see that only pure milk enters the market. All dairy farms should be licensed, and rules made and enforced, from the feeding of the animals to the time the milk has reached the consumer.

The subject of actinomycosis was thoroughly discussed. Professor Crookshank thought that there were only a few points worthy of discussion. In the first place, some manifestations of this disease are liable to be mistaken for tuberculosis. Specimens were exhibited in illustration. This should be considered in connection with the high percentage of cases of tuberculosis among cattle, which had been reported by some observers. Should the disease be placed in the same class as tuberculosis? In view of the liability of cattle affected with actinomycosis being condemned as unfit for food, the distinction between the two diseases becomes a matter of practical importance, and the resemblance between them should be brought home to the minds of medical inspectors. Of late years, nearly 200 cases of actinomycosis have been recognized in the human subject. It is not, really, a new disease, but it was not recognized until recently as a specific micro-parasitic affection. It had been lost sight of under the name of wens, scrofulous, tubercular or strumous abscesses, cancer of the tongue, indurated tongue, cancer of bone, osteosarcoma, and others.

The value of veterinary hygiene to the state cannot be overestimated. Its services have been demonstrated on a large scale in the army, through the almost total eradication of glanders, farcy, mange, cancer of the foot, specific ophthalmia, and other diseases which formerly prevailed extensively, and, sometimes, were transmitted to man.

Under the head of food adulterations, and the international means of prevention, it was stated that the government should establish codes indicating the normal composition of commercial articles in general, and of food stuffs in particular. This code should form the basis of discussions in every country on questions of food adulteration. Every government should make itself acquainted with the code, and with the changes which, from time to time, may be made in it.

The conclusion of the discussion on sewage disposal was, that for small towns, when it can be done, sewage farming is the best method. If any local condition prevents, then either the destruction of the refuse and solid sewage matter by a cre-

mator—such as the Jones Fume cremator—first having separated the liquid from the solid, or the treatment of the sewage by chemicals. The purification of sewage by electricity is now in its experimental stage. The disposal of it by emptying into a running stream should be avoided, if possible.

In the second division was discussed the comparatively-old but newly-appreciated science, demography. Demography has shown itself to be simply invaluable, dealing, as it does, statistically with conditions and classes. As one speaker put it, demography enables the hygienist of to-day to guide evolution, and thus control the future of the race. It is the pioneer that precedes hygiene, pointing out where, and under what conditions, there occurs the greatest loss of life and health. It is the guide which enables hygiene to locate its greatest enemy, and its importance in regard to vital statistics is becoming more and more recognized. The appended tables will illustrate its utility. One shows the comparative mortality of men from 25 to 65 years of age, in different occupations, during the years 1881-'82-'83, the mortality among clergymen being taken as the standard, at 100.

The second table gives the comparative mortality as between dealers in liquors, 25 to 65 years of age, and men of the same ages in other vocations of life.

In conclusion, I wish it were in my power to properly emphasize the amount of good that is being done by sanitary societies of England, and the influence they exert on the public health. The names of two of these societies I cannot refrain from mentioning. One, the Ladies' Sanitary Association of London, which originated in 1856, through the influence of a few charitable ladies. It gradually became a power for good, through the printing and distribution of sanitary tracts in connection with practical work, until to-day it has become a mighty organization, numbering among its patrons the Princess of Wales, and many other distinguished and titled families of Europe. Another, the Sanitary Institute of Great Britain, an institution which it is deemed an honor and privilege to become a member of. It has established Parkes' Museum, in commemoration of that famous hygienist. This establishment contains every modern appliance known to sanitary science.

After the adjournment of the congress, your representative was enabled, through the kindness of Mr. James Morty, mayor of Wallingford, Eng., to inspect the sewerage system and works under course of construction in that city, known as the Shore hydro-pneumatic system. I judge it to be especially adapted to towns of 3,000 or 4,000 inhabitants.

It may be briefly described as a system of stations for the lifting of sewage, worked from one central station, by means of compressed air. A town may be divided into as many districts as the inequalities of the ground indicates, ejector stations being placed under the street, and operated by compressed air, the sewage flowing into these by gradient, through 6-inch pipes. Any number of these can be worked from the central air-compressing stations. There are no manholes through which it is possible for sewer gas to escape and contaminate the surrounding air, that question being solved by the forcing of fresh air through the sewer pipes. These pipes, being only six inches in diameter, are kept nearly two-thirds full and constantly flowing, thereby affording no opportunity for the sewage matter to decompose. The sewage farm, at Wallingford, comprises about 10 acres, and brings a rental of \$300 per annum.

This system of sewerage is now in operation for the houses of Parliament, in London, and many other places in the kingdom. It is also in operation, I believe, in the Auditorium Hotel, Chamber of Commerce, Rand-McNally building, and other places in the city of Chicago, and in the town of Lake, suburban thereto. I understand, also, that it has been determined to adopt this system in connection with the World's Columbian Exposition.

TABLE No. 1.

COMPARATIVE MORTALITY AMONG MEN 25 TO 65 YEARS OF AGE, IN DIFFERENT OCCUPATIONS,  
DURING THE YEARS 1881-'82-'83.

(Standard for comparison, 100.)

Clergymen, priests, and ministers.....	100	Bookbinders.....	210
Lawyers.....	152	Builders, masons, bricklayers.....	174
Medical men.....	202	Carpenters, joiners.....	148
Gardeners.....	108	Cabinet makers, upholsterers.....	173
Farmers.....	108	Plumbers, painters, glaziers.....	216
Agricultural laborers.....	126	Blacksmiths.....	175
Fishermen.....	143	Engineers, machine boiler makers.....	155
Commercial clerks.....	179	Silk manufacturers.....	152
Commercial travelers.....	171	Wool-worsted manufacturers.....	186
Innkeepers, liquor dealers.....	274	Cotton manufacturers.....	196
Inn, hotel service.....	379	Cutlers, scissors makers.....	229
Brewers.....	245	Gunsmiths.....	186
Butchers.....	211	File makers.....	300
Bakers.....	172	Paper makers.....	129
Corn millers.....	172	Glass workers.....	214
Grocers.....	139	Earthenware makers.....	314
Drapers.....	159	Coal miners.....	160
Shopkeepers.....	158	Cornish miners.....	331
Tailors.....	189	Stone and slate quarriers.....	202
Shoemakers.....	156	Car and omnibus service.....	267
Hatters.....	192	Railway, road, clay, etc., laborers.....	185
Printers.....	193	Costermongers, hawkers, street sellers.....	338

TABLE No. 2.

MORTALITY AMONG DEALERS IN LIQUOR, 25 TO 65 YEARS OF AGE, FROM VARIOUS DISEASES, COM-  
PARED WITH THAT OF MEN GENERALLY, OF THE SAME AGE.

<i>Diseases.</i>	<i>Liquor dealers.</i>	<i>Men generally.</i>
Alcoholism.....	55	10
Liver disease.....	240	39
Gout.....	13	3
Diseases of the nervous system.....	200	119
Suicide.....	26	14
Diseases of urinary system.....	83	41
Diseases of circulatory system.....	140	120
Other diseases.....	764	654
All causes.....	1,521	1,060

The next paper was by R. A. Burch, Esq., of Salina, upon the subject of

## PUBLIC HEALTH LAWS.

Justice has been said to be the highest interest of man upon earth. Society organizes itself for the attainment of that end for each individual in it.

The law should never be less, and it should never be more, than a means of justice; and the administration of law should be the art of enforcing justice among men. Each individual has a right to expect this much; beyond this, the law can never go.

To what extent then, if at all, does the establishment and maintenance of justice among the citizens of a State require the interposition of law in matters relating to health? What must be the nature and character of health laws that they may not become the means of injustice?

We must carefully determine the functions of State law in the light of those natural laws upon which we must almost entirely depend, and to contravene which would be but the blindest folly. Present and temporary ills must be endured rather

than attempt to impose regulations by law which must either become futile and nugatory, or serve to enhance and multiply the evils they were intended to correct. Because the well-being of the entire man depends so wholly upon his good physical health, it would seem vitally necessary that instruction should be given the young, as a part of their school education, in the fundamental principles of sanitary science; and there are many large classes of subjects seeming to require stringent State legislation, but with which the law can attempt no more than the slightest interference, until human nature shall undergo a most radical change. The matter of quack patent remedies may be mentioned as one of these.

Your family doctor is an able, thoughtful man, of considerable culture, careful in investigation, uncontrolled by prejudice, and to whom the occult causes of disease have been the sufficient study of a lifetime. He knows the history of every cell in your body. He knows your family history; and day and night, in storm and sunshine, for years, he has responded, without murmur and without delay, to your every call.

Perhaps you have paid him something in the last year, and perhaps not. And yet, if, when suffering from some disorder caused by your own neglect or imprudence, your eye should light upon the advertisement of some wonderful remedy, the prescription for which was found in an elephant's tusk, purloined from the neck of some Zulu medicine man, or which had been a secret among the Flathead Indians for some thousands of years, until, oh, joy to the world! it was discovered by the savior of mankind whose wood-cut portrait adorns the page, you would desert that old family doctor and buy a bottle.

Justice requires the law to do nothing here.

Bishop Berkley believed in tar water. Says Oliver Wendell Holmes: "He might have lived longer, but his fatal illness was so sudden there was no time to stir up a quart of the panacea." He was a very illustrious man, but he held two very odd opinions: That tar water was everything, and that the whole material universe was nothing.

Lord Bolingbroke died from the effects of using a quack cancer remedy. Pasteur and Alfred Russell Wallace, than whom there are none greater in the scientific world, are believers in the cure of diseases by spiritualism.

Two great and all-controlling factors are present in all life—heredity, and environment. Each separate, individual existence, upon which heredity has placed the stamp of heaven or of hell, is set in the midst of an environment, against which it must beat and struggle and contend for the development of its latent capacities and powers, or to whose harsh and adverse circumstances it must ultimately succumb; an environment in which the seeds of weakness and disease are to be developed, perhaps unto death, or in which they are to be eliminated and destroyed, until perfect harmony is established between the life and its conditions.

With the past the law can do nothing. It cannot change a man's ancestry; but all crippling, stiling, contaminating perversion of a natural and correct environment, it is the imperative duty of the law to prevent. All vicious arrangements of it, whereby freedom for the development of the highest powers of which the individual is capable is impaired or obstructed, the law must resolutely suppress and overthrow. Our deep-seated Anglo-Saxon prejudice in favor of vested rights; our swift condemnation of all laws infringing upon our personal liberty and private property, should not deter us from fearlessly taking any legal steps which the public good may require. No right to personal liberty should make us hesitate to treat as an outlaw any man who would break through a cholera or yellow-fever quarantine, no matter how his business might be suffering, or how strongly his home might be pulling at his heart-strings. And no theory of property, or freedom of contract,

or right to pursue any trade or calling, can be allowed to deprive babies of sunlight and pure air, to drive joy from out the eyes of childhood, render youth a flickering shadow, and maturity an enforced decrepitude and lingering old age.

That would not be justice, and upon these subjects may the law never hesitate to be just.

Here again, however, the law cannot undertake too much. It cannot do the work of the individual for him in any matter of health. It cannot remedy for him his imperfect knowledge or weak will. It cannot vote him healthy, or rich, or moral, or wise. It cannot undertake the care of his children. It cannot perform his labor in the world, nor even superintend it, or any part of it.

That would be paternalism—the pernicious system growing popular with many, no doubt, which would take the free-born American citizen, the citizen of Kansas, upon whose virgin soil the great battle for freedom commenced, and place him under tutelage, brand him imbecile, tie the badge of servitude upon him, insult and degrade his manhood, in obedience to the dream of certain so-called philosophers, who have been crying for everybody to be brought to a level—the lowest level—as exemplified in themselves. That would not be justice, but injustice, the most appalling. The State, as well as the Scripture, commands that we work out our own salvation.

All the State can do, to be just, is to insist that there shall be no artificial or unequal perversions of the environment of the people, so that each one may enjoy, to the fullest extent, all favorable natural conditions. It begins, therefore, in matters of health, by protecting men in the enjoyment of those natural media which are fundamentally essential to physical existence and well-being, to the unobstructed and unimpaired common use of which all men are entitled, as water, light, and air. The pollution of any of these, to the danger of health, is an assault upon life, and punishable as a crime. Justice demands the regulation of sewers, of drainage, of the disposition of filth and garbage, of the pollution of waters, and the spread of noxious and poisonous gases and vapors.

Proceeding upon this principle, when density of population requires it, the law may, in justice, regulate the height of buildings, dictate their entire sanitary construction, and regulate all trades and occupations, to the end that they may not endanger the public health. To this end, the law may also regulate the practice of medicine and surgery, the sale and preparation of drugs. It may investigate the purity of food products, and punish adulteration and the sale of diseased meats. It may deprive men of their inalienable right to personal property, and confine and isolate them, to prevent the spread of contagious and infectious diseases; and whenever the public good requires, no matter how sacred and tender the relation upon which the interference bears, the law must forbid public funerals, and regulate burials and the disposition of the dead. These are mere illustrations of the plenary and undeniable power the State has over the public health, and of instances in which justice demands its exercise.

Dr. P. D. St. John, of Wichita, City and County Health Officer, followed with an interesting account of the recent outbreak of diphtheria in the city of Wichita, giving a history of the origin of the outbreak, as far as could be ascertained, and of the appointment of a Board of Health to check the growing advance of the disease. The details of the methods inaugurated by this board are given elsewhere in this volume.

There had thus far been 118 cases and 30 deaths, a mortality of 25.4 per

cent. Fortunately, the force of the disease was now spent, and its complete eradication would soon follow.

The Doctor commented upon the want of uniform coöperation on the part of physicians in dealing with this outbreak, and ventured the opinion that, had such coöperation existed, the disease must have subsided months earlier, and left less mortality in its wake. Cases occurring in April were not made known for months afterwards. To avoid the isolation of patients, such cases had been reported as "croup," "malignant sore throat," "long-continued sore throat," etc. Thus, the disease obtained a strong foothold, and became exceedingly difficult of suppression.

It was worthy of remark, he thought, that not a single case had occurred among colored people. He was unable to explain this immunity.

Upon the conclusion of the Doctor's remarks, the regular business of the convention being concluded, it was, upon motion, resolved that a committee of citizens be appointed to wait upon the mayor and council of Salina and urge the appointment of a Board of Health for that city. The chairman appointed as such committee, Messrs. Geo. White, M. B. Quincy, and Mrs. T. L. Bond, of Salina.

The State Board of Health, through its Secretary, extended the thanks of the Board to the citizens of Salina and the officers and patrons of this convention for their kind consideration, and expressed the hope that the labors of the convention might result in promoting the public-health interest of the State.

On motion of the chairman, Hon. J. G. Mohler, a vote of thanks was tendered the State Board of Health for having selected Salina as the place of this meeting, and for the valuable instruction received by the citizens therefrom.

The thanks of the convention were also voted to Dr. J. W. Jenney, local member of the State Board of Health, for his valuable services in behalf of the convention.

Whereupon the convention adjourned *sine die*.

NOTE.—The Board is under obligations to Mr. C. W. Burch, of Salina, for his efficient services as secretary of the convention.

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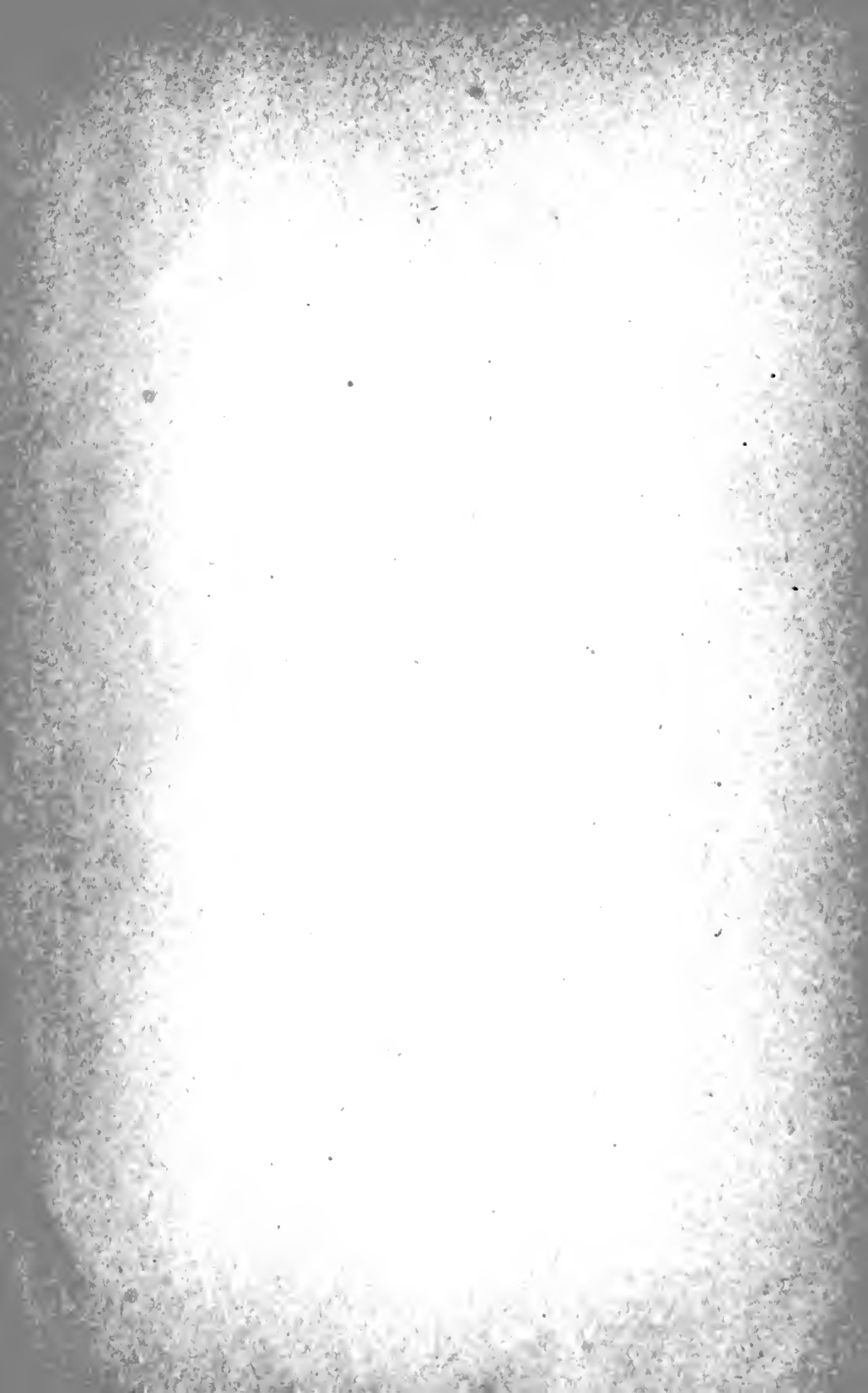


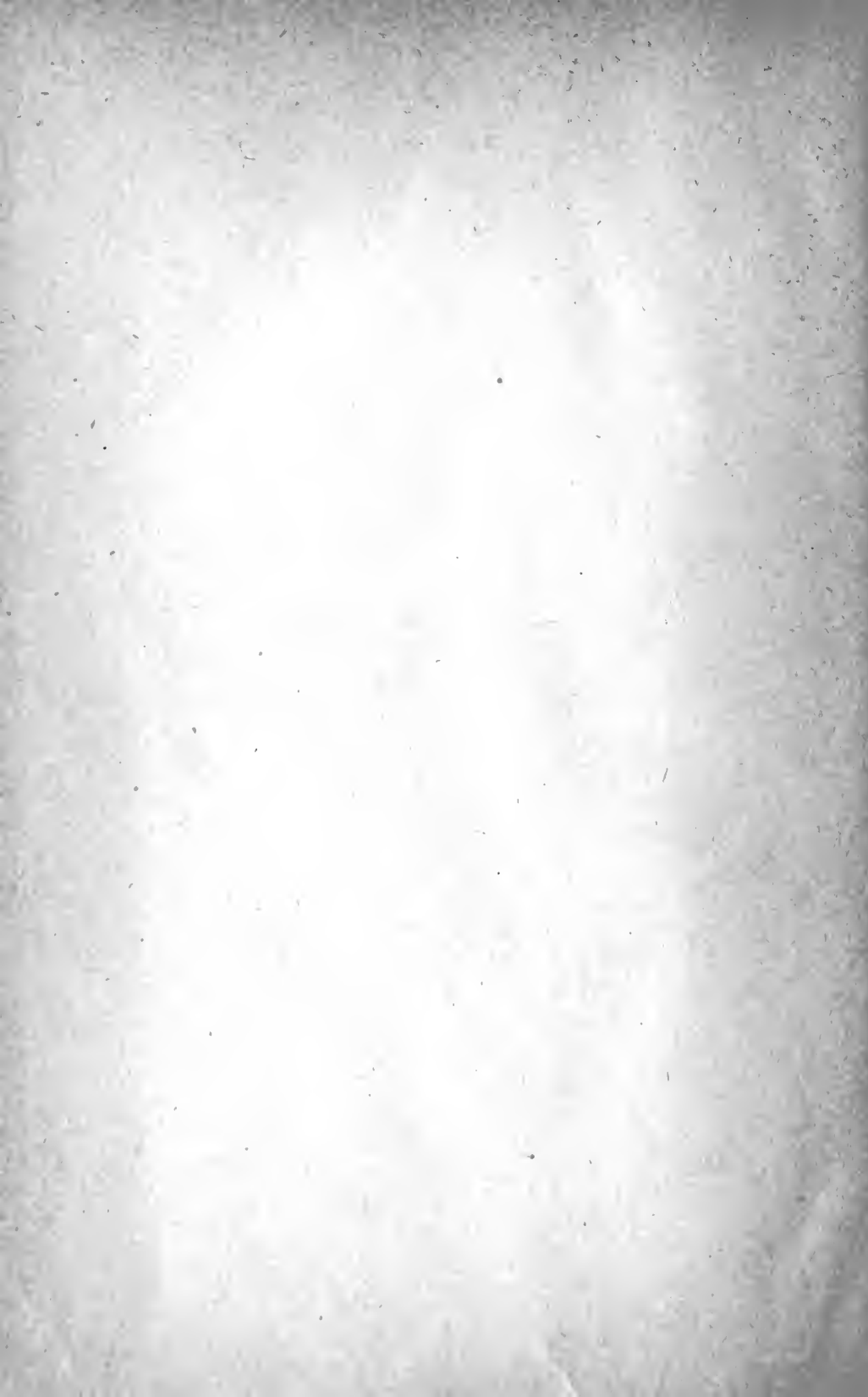
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